Galaxy
SCIENCE FICTION

MARCH 1958

35¢

AN EPIC
2 PART SERIAL

THE BIG TIME
By
FRITZ LEIBER

•

THE ORBIT OF THE VANGUARD SATELLITE
By
WILLY LEY

•

SPARE THE ROD
By
LLOYD BIGGLE, JR.

•

A FEAT OF DEMONS
By
WILLIAM MORRISON

And Other Stories



YOURS — FOR HALF PRICE!

THE CREAM OF 1957 SCIENCE FICTION BOOKS
IN REGULAR HARDCOVER FIRST EDITIONS FOR

$1.50 EACH

Now you have the opportunity of a lifetime to build your own library of the best science fiction being published today! No "reprint editions". . . no "remainders" . . . nothing to join!

By special arrangement with the biggest regular publisher of science fiction titles in the country, we now offer you . . . for a limited time only . . . FIRST CHOICE of BRAND NEW, CURRENT BOOKS . . . at HALF THE REGULAR PRICE. Including:

EARTHMAN'S BURDEN *by Anderson and Dickson* — Illustrated by CARTIER — the famous and fantastically funny "Hoka" stories now available for the first time in hard covers.
Reg. $3.00 YOU PAY $1.50

THE RETURN OF CONAN *by DeCamp and Nyberg* — latest and greatest in the popular series of swashbuckling adventures featuring the heroic rogue.
Reg. $3.00 YOU PAY $1.50

THE SHROUDED PLANET *by Robert Randall* — a hardcover "first" from a fast-rising new name in science fiction.
Reg. $3.00 YOU PAY $1.50

UNDERSEA CITY *by Pohl and Williamson* — two of the greatest names in the field combine their talents to continue their series of adventures in a weird world.
Reg. $2.75 YOU PAY $1.50

THE SURVIVORS *by Tom Godwin* — Specially expanded and rewritten version of one of this year's most popular magazine novels by a talked-about new sf star.
Reg. $3.00 YOU PAY $1.50

THEY'D RATHER BE RIGHT — *by Clifton and Riley* — At last, the famous "Hugo"-winning prize novel, in book form!
Reg. $3.00 YOU PAY $1.50

ORDER TODAY! Quantities are limited, so don't delay! Use the convenient order-blank below, or a facsimile.

"PICK-A-BOOK" • DEPT. G. 799 Broadway, New York 3, N. Y.

Gentlemen: Please send me the following titles, at $1.50 each, 3 for $4.00, 6 for $7.50.

___ Earthman's Burden
___ The Return of Conan
___ The Shrouded Planet
___ Undersea City
___ The Survivors
___ They'd Rather Be Right

I enclose $_____ for_____books checked
(plus 15c postage per book if outside the U.S.)

Name _____

Address _____

☐ Check this box if you want free catalog listing dozens of other titles at these bargain prices or even greater savings.

MARK YOUR CHOICES

EACH MARK Means

Hours of Good Reading Enjoyment

GALAXY PUBLISHING CO., INC.
421 Hudson Street, New York 14, N. Y.

Please send me post-paid the novels checked below.

- ☐ 1—**SINISTER BARRIER** by Eric Frank Russell **SOLD OUT**
- ☐ 2—**LEGION OF SPACE** by Jack Williamson **SOLD OUT**
- ☐ 3—**PRELUDE TO SPACE** by Arthur C. Clarke **SOLD OUT**
- ☐ 4—**THE AMPHIBIANS** by S. Fowler Wright **SOLD OUT**
- ☐ 5—**THE WORLD BELOW** by S. Fowler Wright
- ☐ 6—**THE ALIEN** by Raymond F. Jones
- ☐ 7—**EMPIRE** by Clifford D. Simak **SOLD OUT**
- ☐ 8—**ODD JOHN** by Olaf Stapeldon **SOLD OUT**
- ☐ 9—**FOUR SIDED TRIANGLE** by William F. Temple
- ☐ 10—**RAT RACE** by Jay Franklin
- ☐ 11—**CITY IN THE SEA** by Wilson Tucker
- ☐ 12—**HOUSE OF MANY WORLDS** by Sam Merwin, Jr.
- ☐ 13—**SEEDS OF LIFE** by John Taine
- ☐ 14—**PEBBLE IN THE SKY** by Isaac Asimov
- ☐ 15—**THREE GO BACK** by J. Leslie Mitchell
- ☐ 16—**THE WARRIORS OF DAY** by James Blish
- ☐ 17—**WELL OF THE WORLDS** by Louis Padgett
- ☐ 18—**CITY AT WORLD'S END** by Edmond Hamilton
- ☐ 19—**JACK OF EAGLES** by James Blish
- ☐ 20—**BLACK GALAXY** by Murray Leinster
- ☐ 21—**THE HUMANOIDS** by Jack Williamson
- ☐ 22—**KILLER TO COME** by Sam Merwin, Jr.
- ☐ 23—**MURDER IN SPACE** by David V. Reed
- ☐ 24—**LEST DARKNESS FALL** by L. Sprague de Camp

Please Enter My Order For Your Next 6 Novels
I Enclose A $2.00 Check Here ☐
Add 50c Foreign Postage

---

6 For $1.50 or 35c each

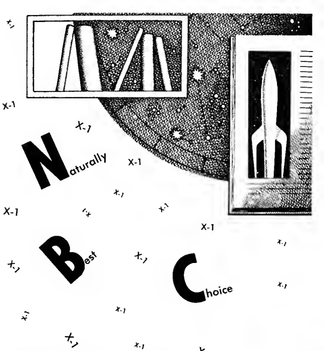
$.....

Enclose check, cash or money order. We pay postage

Name .....

Address .....

City ..... State .....



Each Thursday nite on Radio! Check your local listings for the best stories from **Galaxy** — forcefully dramatized — its **N**aturally your **B**est **C**hoice for tops in adult Science Fiction.

NBC

X-1=The choice from Galaxy, adapted by the tops at N. B. C.

OPTICAL BARGAINS

See the Stars, Moon, Planets Close Up!

3" Astronomical Reflecting Telescope

Famous Mt. Palomar Type!

60 & 120 Power—An Unusual Buy!



PHOTOGRAPHERS!
Adapt your camera to this Scope for excellent Telephoto shots and fascinating photos of moon!

Assembled—Ready to Use!

You'll see the Rings of Saturn, the fascinating planet Mars, huge craters on the Moon, Star Clusters, Moons of Jupiter in detail. Galaxies! Equatorial mount with lock on both axes. Aluminized and overcoated 3" diameter highspeed f/10 mirror. Telescope comes equipped with a 50X eyepiece and a mounted Barlow Lens, giving you 60 and 120 power. An Optical Finder Telescope, always so essential, is also included. Sturdy, hardwood, portable tripod.

Free with scope: Valuable STAR CHART and 272-page "Astronomy Book."

Stock No. 85,050-F .....$29.50 f. o. b.
(Shipping wt. 10 lbs.) Barrington, N. J.



4½ ASTRONOMICAL TELESCOPE

Mt. Palomar type. Up to 270 power. A fine Reflector Telescope complete with real Equatorial Mount and Tripod and 6X Finder. Aluminum tube, 4¼" dia. mirror, rack and pinion focusing eyepiece holder, 2 eye-pieces and mounted Barlow Lens for 40X, 90X, 120X and 270X. Shipping weight approx. 25 lbs.

Stock #85,006-F.....complete.....$74.50 f. o. b. Barrington, N. J.

New! 2 in 1 Combination Pocket-Size 50-Power MICROSCOPE and 10-Power TELESCOPE





ONLY $4.50 Postpaid

Useful Telescope and Microscope combined in one amazing precision instrument. Imported! No larger than a fountain pen. Telescope is 10-Power. Microscope magnifies 50 Times. Sharp focus at any range. Handy for sports, looking at small objects, just plain snooping.

Send Check or M. O.
Satisfaction Guaranteed

Order Stock No. 30,059-F .....$4.50 Postpaid

INFRARED SNIPERSCOPE TELESCOPE & PARTS



See in the dark—without being observed. War Surplus Sniperscope M-2. Govt. cost about $1200. Instrument complete, ready to use. Includes Power Pack, Infrared light source. Will operate from 6 V. auto battery. Battery or transformer available.

Stock No. 85,053-F
$150.00 f.o.b.

Save still more money! Build your own Sniperscope! We will furnish instructions—parts, including Power Packs, IP25A Image tubes, light units, filters, etc. For details—request FREE Catalog "F"

Geophysical Year Scoop
Real 150 Power Astronomical Telescope



Only $16.95 Postpaid

Refractor type! Clear, razor-sharp viewing of stars, planets, craters on moon, etc. 32mm achromatic objective lens! First surface mirror diagonal (and a "stoop" viewing). Removable eyepiece—interchangeable. 30, 75 and 150 power! Tube length 27½". Special attachment clamp for vibrationless viewing. Money back guarantee. Included free: 273 page "Handbook of the Heavens," Star Chart and 16 page Star Booklet.

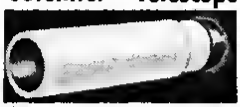
Stock No. 80,060-F .....$16.95 Postpaid

LARGER 42mm OBJECTIVE MODEL— 67, 100, 200 power—same features as above, with 38" tube length—(included free: "Handbook of the Heavens," Star Chart and 16 page Star Booklet).

Stock No. 80,061-F .....$19.95 Postpaid

See The Satellites
New, Low Price "Sotelliter" Telescope

Get ready for a terrific sky show as more Satellites are vaulted into space. See thrilling sights with our amazing Satellite Scope at unheard of low cost. Also view comets—use as a Richfield Scope for viewing star clusters 5 power-wide 12° field. Use of high quality war surplus optics makes possible this bargain.



Stock No. 70,150-F .....$9.95 Postpaid

We are the manufacturers of the Famous Moonwatch Satellite Telescope!

GET FREE CATALOG — F

America's No. 1 source of supply for experimenters, hobbyists. World's largest variety of Optical Items. Bargains galore. . . War Surplus—Imported — Domestic! Microscopes, Telescopes, Satellite Scopes, Infrared Sniperscopes and Parts, Prisms, Lenses, Reticles, Mirrors and dozens of other hard-to-get Optical Items.



ORDER BY STOCK NUMBER . SEND CHECK OR MONEY ORDER . SATISFACTION GUARANTEED!

EDMUND SCIENTIFIC CO., BARRINGTON, N. J.

THEY'RE BACK

SOME time ago, this department, proving There Are Aliens Among us, warned that we might be conquered with such invasion weapons as paper clips and rubber bands, provided clues by which these uninvited guests might be identified.

Readers have asked for more data, were reassured when none was available. Far from joining them, I found the sudden quiet alarming; the aliens obviously had gone into hiding. But now they are emerging again and no more able, even after their long seclusion, to stop betraying their alienness than before.

Arthur F. Ackley sent in this clipping from the Schenectady *Union Star*: "last Tuesday. Air Force technicians estiy Maj. David Simons on his balloon flight when this view was made including stomated his altitude at more than 50,000 feet reported seeing spectacular storm. Imagrm clouds in center. Simons at one point face of balloe at upper right was reflection from sur-This picture was made on infra-red film bon's gondola."

Mr. Ackley reports that picture and caption appeared in his copy of the paper; not in others. He asks if they are trying to communicate with him and adds that he is particularly interested in the imagrm clouds in center. Running this item may answer both questions. Let us know what happens, Mr. Ackley, if you're in any position to.

Theodore Cogswell, who teaches at the U. of Kentucky, says: "THEY are taking over our universities! For a long time, I thought it was me. A stack of freshmen themes would come in and as I started through them I kept having the feeling I'd read them before. This was complicated by a feeling as I walked into classes at the beginning of the semester that I had seen the students before. To this add that most of my second semester students seemed to have no memory of anything that was discussed during the first semester.

"There is only one explanation: THEY have obtained matrixes of 50 average freshmen types and are sending them to Earth by thousands for one semester orientation periods, each equipped with a survival kit containing 16 freshmen themes.

"Flunking them out doesn't help since the grade isn't given until

(Continued on page 123)

ALL ORIGINAL STORIES

Galaxy SCIENCE FICTION

MARCH, 1958
VOL. 15, NO. 5

CONTENTS

2-PART SERIAL—Installment 1

THE BIG TIME ..... *by Fritz Leiber* 6

NOVELETS

SPARE THE ROD ..... *by Lloyd Biggle, Jr.* 86

A FEAST OF DEMONS ..... *by William Morrison* 124

SHORT STORIES

MY FAIR PLANET ..... *by Evelyn E. Smith* 58

THE ETHICAL WAY ..... *by Joseph Farrell* 107

SCIENCE DEPARTMENT

FOR YOUR INFORMATION ..... *by Willy Ley* 73
The Orbit of the Vonguard Sotellite

FEATURES

EDITOR'S PAGE ..... *by H. L. Gold* 4

FORECAST 118

GALAXY'S FIVE STAR SHELF ..... *by Floyd C. Gale* 119

Cover by DEMBER Showing: Manned space station intersecting orbit of an early information-gathering unmanned satellite. In the vacuum of space, telemetering devices need not be enclosed in satellite, to leave room for batteries to send data to Earth. Manned satellite, of course, is not dependent on one-shot equipment, is supplied regularly by nuclear rocket.

ROBERT M. GUINN, Publisher — H. L. GOLD, Editor
WILLY LEY, Science Editor — W. I. VAN DER POEL, Art Director
JOAN J. De MARIO, Production Manager — SONDRA GRESEN, Asst. to the Editor

GALAXY *Science Fiction* is published monthly by Galaxy Publishing Corporation. Main offices: 421 Hudson Street, New York 14, N. Y. 35c per copy. Subscription: (12 copies) $3.50 per year in the United States, Canada, Mexico, South and Central America and U. S. Possessions. Elsewhere $4.50. Entered as second-class matter at the Post Office, New York, N. Y. Copyright, New York 1958, by Galaxy Publishing Corporation, Robert M. Guinn, president. All rights, including translations reserved. All material submitted must be accompanied by self-addressed stamped envelopes. The publisher assumes no responsibility for unsolicited material. All stories printed in this magazine are fiction, and any similarity between characters and actual persons is coincidental.

Printed in the U.S.A. by The Guinn Co., Inc., N. Y. — Title Reg. U.S. Pat. Off.



By FRITZ LEIBER

THE BIG TIME

Beginning a 2-Part Serial

You can't know there's a war on—for the Snakes coil and Spiders weave to keep you from knowing it's being fought over your live and dead body!

CHAPTER 1

When shall we three meet again
In thunder, lightning, or in rain?

When the hurlyburly's done.
When the battle's lost and won.
—Macbeth

ENTER THREE HUSSARS

MY name is Greta Forzane. Twenty-nine and a party girl would describe me. I was born in Chicago, of Scandinavian parents, but now I operate chiefly outside space and time—not in Heaven or Hell, if there are such places, but not in the cosmos or universe you know either.

I am not as romantically entrancing as the immortal film star

Illustrated by FINLAY



who also bears my first name, but I have a rough-and-ready charm of my own. I need it, for my job is to nurse back to health and kid back to sanity Soldiers badly roughed up in the biggest war going. This war is the Change War, a war of time travelers—in fact, our private name for being in this war is being on the Big Time. Our Soldiers fight by going back to change the past, or even ahead to change the future, in ways to help our side win the final victory a billion or more years from now. A long killing business, believe me.

You don't know about the Change War, but it's influencing your lives all the time and maybe you've had hints of it without realizing.

Have you ever worried about your memory, because it doesn't seem to be bringing you exactly the same picture of the past from one day to the next? Have you ever been afraid that your personality was changing because of forces beyond your knowledge or control? Have you ever felt sure that sudden death was about to jump you from nowhere? Have you ever been scared of Ghosts—not the story-book kind, but the billions of beings who were once so real and strong it's hard to believe they'll just sleep harmlessly forever? Have you ever wondered about those things you may call devils or Demons—spirits able to range through all time and space, through the hot hearts of stars and the cold skeleton of space between the galaxies? Have you ever thought that the whole universe might be a crazy, mixed-up dream? If you have, you've had hints of the Change War.

How I got recruited into the Change War, how it's conducted, what the two sides are, why you don't consciously know about it, what I really think about it—you'll learn in due course.

THE place outside the cosmos where I and my pals do our nursing job I simply call the Place. A lot of my nursing consists of amusing and humanizing Soldiers fresh back from raids into time. In fact, my formal title is Entertainer and I've got my silly side, as you'll find out.

My pals are two other gals and three guys from quite an assortment of times and places. We're a pretty good team, and with Sid bossing, we run a pretty good Recuperation Station, though we have our family troubles. But most of our troubles come slamming into the Place with the beat-up Soldiers, who've generally just been going through hell and want to raise some of their own. As a matter of fact, it was three newly arrived Soldiers who started this thing I'm going to tell you about,

this thing that showed me so much about myself and everything.

When it started, I had been on the Big Time for a thousand sleeps and two thousand nightmares, and working in the Place for five hundred-one thousand. This two-nightmares routine every time you lay down your dizzy little head is rough, but you pretend to get used to it because being on the Big Time is supposed to be worth it.

The Place is midway in size and atmosphere between a large nightclub where the Entertainers sleep in and a small Zeppelin hangar decorated for a party, though a Zeppelin is one thing we haven't had yet. You go out of the Place, but not often if you have any sense and if you are an Entertainer like me, into the cold light of a morning filled with anything from the earlier dinosaurs to the later spacemen, who look strangely similar except for size.

Solely on doctor's orders, I have been on cosmic leave six times since coming to work at the Place, meaning I have had six brief vacations, if you care to call them that, for believe me they are busman's holidays, considering what goes on in the Place all the time. The last one I spent in Renaissance Rome, where I got a crush on Cesare Borgia, but I got over it. Vacations are for the birds, anyway, because they have to be fitted by the Spiders into serious operations of the Change War, and you can imagine how restful that makes them.

"See those Soldiers changing the past? You stick along with them. Don't go too far up front, though, but don't wander off either. Relax and enjoy yourself."

Ha! Now the kind of recuperation Soldiers get when they come to the Place is a horse of a far brighter color, simply dazzling by comparison. Entertainment is our business and we give them a bang-up time and send them staggering happily back into action, though once in a great while something may happen to throw a wee shadow on the party.

I AM dead in some ways, but don't let that bother you—I am lively enough in others. If you met me in the cosmos, you would be more apt to yak with me or try to pick me up than to ask a cop to do same or a father to douse me with holy water, unless you are one of those hard-boiled reformer types. But you are not likely to meet me in the cosmos, because (bar Basin Street and the Prater) 15th Century Italy and Augustan Rome—until they spoiled it — are my favorite (Ha!) vacation spots and, as I have said, I stick as close to the Place as I can. It is really the nicest Place in the whole Change World. (Crisis! I even *think* of it capitalized!)

Anyhoo, when this thing started, I was twiddling my thumbs on the couch nearest the piano and thinking it was too late to do my fingernails and whoever came in probably wouldn't notice them anyway.

The Place was jumpy like it always is on an approach and the gray velvet of the Void around us was curdled with the uneasy lights you see when you close your eyes in the dark.

Sid was tuning the Maintainers for the pickup and the right shoulder of his gold-worked gray doublet was streaked where he'd been wiping his face on it with quick ducks of his head.

Beauregard was leaning as close as he could over Sid's other shoulder, one white-trousered knee neatly indenting the rose plush of the control divan, and he wasn't missing a single flicker of Sid's old fingers on the dials; Beau's co-pilot besides piano player. Beau's face had that dead blank look it must have had when every double eagle he owned and more he didn't were riding on the next card to be turned in the gambling saloon on one of those wedding-cake Mississippi steamboats.

Doc was soused as usual, sitting at the bar with his top hat pushed back and his knitted shawl pulled around him, his wide eyes seeing whatever horrors a life in Nazi-occupied Czarist Russia can add to being a drunk Demon in the Change World.

Maud, who is the Old Girl, and Lili — the New Girl, of course — were telling the big beads of their identical pearl necklaces.

You might say that all us Entertainers were a bit edgy; being Demons doesn't automatically make us brave.

Then the red telltale on the Major Maintainer went out and the Door began to darken in the Void facing Sid and Beau, and I felt Change Winds blowing hard and my heart missed a couple of beats, and the next thing three Soldiers had stepped out of the cosmos and into the Place, their first three steps hitting the floor hard as they changed times and weights.

THEY were dressed as officers of hussars, as we'd been advised, and — praise the Bonny Dew! — I saw that the first of them was Erich, my own dear little commandant, the pride of the von Hohenwalds and the Terror of the Snakes. Behind him was some hard-faced Roman or other, and beside Erich and shouldering into him as they stamped forward was a new boy, blond, with a face like a Greek god who's just been touring a Christian hell.

They were uniformed exactly alike in black — shakos, fur-edged pelisses, boots, and so forth—with

white skull emblems on the shakos. The only difference between them was that Erich had a Caller on his wrist and the New Boy had a black-gauntleted glove on his left hand and was clenching the mate in it, his right hand being bare like both of Erich's and the Roman's.

"You've made it, lads, hearts of gold," Sid boomed at them, and Beau twitched a smile and murmured something courtly and Maud began to chant, "Shut the Door!" and the New Girl copied her and I joined in because the Change Winds do blow like crazy when the Door is open, even though it can't ever be shut tight enough to keep them from leaking through.

"Shut it before it blows wrinkles in our faces," Maud called in her gamin voice to break the ice, looking like a skinny teen-ager in the tight, knee-length frock she'd copied from the New Girl.

But the three Soldiers weren't paying attention. The Roman — I remembered his name was Mark — was blundering forward stiffly as if there were something wrong with his eyes, while Erich and the New Boy were yelling at each other about a kid and Einstein and a summer palace and a bloody glove and the Snakes having booby-trapped Saint Petersburg. Erich had that taut sadistic smile he gets when he wants to hit me.

The New Boy was in a tearing rage. "Why'd you pull us out so bloody fast? We fair chewed the Nevsky Prospekt to pieces galloping away."

"Didn't you feel their stun guns, *Dummkopf*, when they sprung the trap — too soon, *Gott sei Dank?*" Erich demanded.

"I did," the New Boy told him. "Not enough to numb a cat. Why didn't you show us action?"

"Shut up. I'm your leader. I'll show you action enough."

"You won't. You're a filthy Nazi coward."

"Weibischer Engländer!"

"Bloody Hun!"

"Schlange!"

The blond lad knew enough German to understand that last crack. He threw back his sable-edged pelisse to clear his sword arm and he swung away from Erich, which bumped him into Beau. At the first sign of the quarrel, Beau had raised himself from the divan as quickly and silently as a — no, I won't use that word— and slithered over to them.

"Sirs, you forget yourselves," he said sharply, off balance, supporting himself on the New Boy's upraised arm. "This is Sidney Lessingham's Place of Entertainment and Recuperation. There are ladies —"

WITH a contemptuous snarl, the New Boy shoved him off and snatched with his bare

hand for his saber. Beau reeled against the divan, it caught him in the shins and he fell toward the Maintainers. Sid whisked them out of the way as if they were a couple of beach radios — simply nothing in the Place is nailed down — and had them back on the coffee table before Beau hit the floor. Meanwhile, Erich had his saber out and had parried the New Boy's first wild slash and lunged in return, and I heard the scream of steel and the rutch of his boot on the diamond-studded pavement.

BEAU rolled over and came up pulling from the ruffles of his shirt bosom a derringer I knew was some other weapon in disguise —a stun gun or even an Atropos. Besides scaring me damp for Erich and everybody, that brought me up short: us Entertainers' nerves must be getting as naked as the Soldiers', probably starting when the Spiders canceled all cosmic leaves twenty sleeps back.

Sid shot Beau his look of command, rapped out, "I'll handle this, you whoreson firebrand," and turned to the Minor Maintainer. I noticed that the telltale on the Major was glowing a reassuring red again, and I found a moment to thank Mamma Devi that the Door was shut.

Maud was jumping up and down, cheering I don't know which —nor did she, I bet—and the New Girl was white and I saw that the sabers were working more businesslike. Erich's flicked, flicked, flicked again and came away from the blond lad's cheek spilling a couple of red drops. The blond lad lunged fiercely, Erich jumped back, and the next moment they were both floating helplessly in the air, twisting like they had cramps.

I realized quick enough that Sid had shut off gravity in the Door and Stores sectors of the Place, leaving the rest of us firm on our feet in the Refresher and Surgery sectors. The Place has sectional gravity to suit our Extraterrestrial buddies — those crazy ETs sometimes come whooping in for recuperation in very mixed batches.

From his central position, Sid called out, kindly enough but taking no nonsense, "All right, lads, you've had your fun. Now sheathe those swords."

For a second or so, the two black hussars drifted and contorted. Erich laughed harshly and neatly obeyed — the commandant is used to free fall. The blond lad stopped writhing, hesitated while he glared upside down at Erich and managed to get his saber into its scabbard, although he turned a slow somersault doing it. Then Sid switched on their gravity, slow enough so they wouldn't get sprained landing.

ERICH laughed, lightly this time, and stepped out briskly toward us. He stopped to clap the New Boy firmly on the shoulder and look him in the face.

"So, now you get a good scar," he said.

The other didn't pull away, but he didn't look up and Erich came on. Sid was hurrying toward the New Boy, and as he passed Erich, he wagged a finger at him and gayly said, "You rogue." Next thing I was giving Erich my "Man, you're home" hug and he was kissing me and cracking my ribs and saying, *"Liebchen! Doppchen!"* — which was fine with me because I do love him and I'm a good lover and as much a Doubleganger as he is.

We had just pulled back from each other to get a breath—his blue eyes looked so sweet in his worn face — when there was a thud behind us. With the snapping of the tension, Doc had fallen off his bar stool and his top hat was over his eyes. As we turned to chuckle at him, Maud squeaked and we saw that the Roman had walked straight up against the Void and was marching along there steadily without gaining a foot, like it does happen, his black uniform melting into that inside-your-head gray.

Maud and Beau rushed over to fish him back, which can be tricky. The thin gambler was all courtly efficiency again. Sid supervised from a distance.

"What's wrong with him?" I asked Erich.

He shrugged. "Overdue for Change Shock. And he was nearest the stun guns. His horse almost threw him. *Mein Gott,* you should have seen Saint Petersburg, *Leibchen*: the Nevsky Prospekt, the canals flying by like reception carpets of blue sky, a cavalry troop in blue and gold that blundered across our escape, fine women in furs and ostrich plumes, a monk with a big tripod and his head under a hood — it gave me the horrors seeing all those Zombies flashing past and staring at me in that sick unawakened way they have, and knowing that some of them, say the photographer, might be Snakes."

Our side in the Change War is the Spiders, the other side is the Snakes, though all of us — Spiders and Snakes alike — are Doublegangers and Demons too, because we're cut out of our lifelines in the cosmos. Your lifeline is all of you from birth to death. We're Doublegangers because we can operate both in the cosmos and outside of it, and Demons because we act reasonably alive while doing so — which the Ghosts don't. Entertainers and Soldiers are all Demon-Doublegangers, whichever side they're on — though they say the Snake Places are simply ghast-

ly. Zombies are dead people whose lifelines lie in the so-called past.

"WHAT were you doing in Saint Petersburg before the ambush?" I asked Erich. "That is, if you can talk about it."

"Why not? We were kidnapping the infant Einstein back from the Snakes in 1883. Yes, the Snakes got him, *Liebchen*, only a few sleeps back, endangering the West's whole victory over Russia—"

"—which gave your dear little Hitler the world on a platter for fifty years and got me loved to death by your sterling troops in the Liberation of Chicago—"

"—but which leads to the ultimate victory of the Spiders and the West over the Snakes and Communism, *Leibchen*, remember that. Anyway, our counter-snatch didn't work. The Snakes had guards posted—most unusual and we weren't warned. The whole thing was a great mess. No wonder Bruce lost his head—not that it excuses him."

"The New Boy?" I asked. Sid hadn't got to him and he was still standing with hooded eyes where Erich had left him, a dark pillar of shame and rage.

"*Ja*, a lieutenant from World War One. An Englishman."

"I gathered that," I told Erich. "Is he really effeminate?"

"*Weibischer?*" He smiled. "I had to call him something when he said I was a coward. He'll make a fine Soldier — only needs a little more shaping."

"You men are so original when you spat." I lowered my voice. "But you shouldn't have gone on and called him a Snake, Erich mine."

"*Schlange?*" The smile got crooked. "Who knows—about any of us? As Saint Petersburg showed me, the Snakes' spies are getting cleverer than ours." The blue eyes didn't look sweet now. "Are you, *Liebchen*, really nothing more than a good loyal Spider?"

"Erich!"

"All right, I went too far — with Bruce and with you too. We're all hacked these days, riding with one leg over the breaking edge."

Maud and Beau were supporting the Roman to a couch, Maud taking most of his weight, with Sid still supervising and the New Boy still sulking by himself. The New Girl should have been with him, of course, but I couldn't see her anywhere and I decided she was probably having a nervous breakdown in the Refresher, the little jerk.

"The Roman looks pretty bad, Erich," I said.

"Ah, Mark's tough. Got virtue, as his people say. And our little starship girl will bring him back to life if anybody can and if . . ."

". . . you call this living," I filled in dutifully.

HE was right. Maud had fifty-odd years of psychomedical experience, 23rd Century at that. It should have been Doc's job, but that was fifty drunks back.

"Maud and Mark, that will be an interesting experiment," Erich said. "Reminiscent of Goering's with the frozen men and the naked gypsy girls."

"You are a filthy Nazi. She'll be using electrophoresis and deep suggestion, if I know anything."

"How will you be able to know anything, *Liebchen*, if she switches on the couch curtains, as I perceive she is preparing to do?"

"Filthy Nazi I said and meant."

"Precisely." He clicked his heels and bowed a millimeter. "Erich Friederich von Hohenwald, *Oberleutnant* in the army of the Third Reich. Fell at Narvik, where he was Recruited by the Spiders. Lifeline lengthened by a Big Change after his first death and at latest report Commandant of Toronto, where he maintains extensive baby farms to provide him with breakfast meat, if you believe the handbills of the *voyageurs* underground. At your service."

"Oh, Erich, it's all so lousy," I said, touching his hand, reminded that he was one of the unfortunates Resurrected from a point in their lifelines well before their deaths—in his case, because the date of his death had been shifted forward by a Big Change after his Resurrection. And as every Demon finds out, if he can't imagine it beforehand, it is pure hell to remember your future, and the shorter the time between your Resurrection and your death back in the cosmos, the better. Mine, bless Bab-ed-Din, was only an action-packed ten minutes on North Clark Street.

Erich put his other hand lightly over mine. "Fortunes of the Change War, *Liebchen*. At least I'm a Soldier and sometimes assigned to future operations—though why we should have this monomania about our future personalities back there, I don't know. Mine is a stupid *Oberst*, thin as paper—and frightfully indignant at the *voyageurs!* But it helps me a little if I see him in perspective and at least I get back to the cosmos pretty regularly, *Gott sei Dank*, so I'm better off than you Entertainers."

I didn't say aloud that a Changing cosmos is worse than none, but I found myself sending a prayer to the Bonny Dew for my father's repose, that the Change Winds would blow lightly across the lifeline of Anton A. Forzane, professor of physiology, born in Norway and buried in Chicago. Woodlawn Cemetery is a nice gray spot.

"That's all right, Erich," I said. "We Entertainers Got Mittens too."

He scowled around at me suspiciously, as if he were wondering whether I had all my buttons on.

"Mittens?" he said. "What do

you mean? I'm not wearing any. Are you trying to say something about Bruce's gloves — which incidentally seem to annoy him for some reason. No, seriously, Greta, why do you Entertainers need mittens?"

"Because we get cold feet sometimes. At least I do. Got Mittens, as I say."

A SICKLY light dawned in his Prussian puss. He muttered, "Got mittens . . . *Gott mit uns*... God with us," and roared softly, "Greta, I don't know how I put up with you, the way you murder a great language for cheap laughs."

"You've got to take me as I am," I told him, "mittens and all, thank the Bonny Dew—" and hastily explained, "That's French — *le bon Dieu* — the good God — don't hit me. I'm not going to tell you any more of my secrets."

He laughed feebly, like he was dying.

"Cheer up," I said. "I won't be here forever, and there are worse places than the Place."

He nodded grudgingly, looking around. "You know what, Greta, if you'll promise not to make some dreadful joke out of it: on operations, I pretend I'll soon be going backstage to court the world-famous ballerina Greta Forzane."

He was right about the backstage part. The Place is a regular theater-in-the-round with the Void for an audience, the Void's gray hardly disturbed by the screens masking Surgery (Ugh!), Refresher and Stores. Between the last two are the bar and kitchen and Beau's piano. Between Surgery and the sector where the Door usually appears are the shelves and taborets of the Art Gallery. The control divan is stage center. Spaced around at a fair distance are six big low couches—one with its curtains now shooting up into the gray—and a few small tables. It is like a ballet set and the crazy costumes and characters that turn up don't ruin the illusion. By no means. Diaghilev would have hired most of them for the Ballet Russe on first sight, without even asking them whether they could keep time to music.

CHAPTER 2

Last week in Babylon,
Last night in Rome,
— Hodgson

A RIGHT-HAND GLOVE

BEAU had gone behind the bar and was talking quietly at Doc, but with his eyes elsewhere, looking very sallow and professional in his white, and I thought —Damballa! — I'm in the French Quarter. I couldn't see the New Girl. Sid was at last getting to the New Boy after the fuss about Mark. He threw me a sign and I started over with Erich in tow.

"Welcome, sweet lad. Sidney Lessingham's your host, and a fellow Englishman. Born in King's Lynn, 1564, schooled at Cambridge, but London was the life and death of me, though I outlasted Bessie, Jimmie, Charlie, and Ollie almost. And what a life! By turns a clerk, a spy, a bawd — the two trades are hand in glove — a poet of no account, a beggar, and a peddler of resurrection tracts. Beau Lassiter, our throats are tinder!"

At the word "poet," the New Boy looked up, but resentfully, as if he had been tricked into it.

"And to spare your throat for drinking, sweet gallant, I'll be so bold as to guess and answer one of your questions," Sid rattled on. "Yes, I knew Will Shakespeare—we were of an age—and he was such a modest, mind-your-business rogue that we all wondered whether he really did write those plays. Your pardon, 'faith, but that scratch might be looked to."

Then I saw that the New Girl hadn't lost her head, but gone to Surgery (Ugh!) for a first-aid tray. She reached a swab toward the New Boy's sticky cheek, saying rather shrilly, "If I might . . ."

Her timing was bad. Sid's last words and Erich's approach had darkened the look in the young Soldier's face and he angrily swept her arm aside without even glancing at her. Erich squeezed my arm. The tray clattered to the floor —and one of the drinks that Beau was bringing almost followed it. Ever since the New Girl's arrival, Beau had been figuring that she was his responsibility, though I don't think the two of them had reached an agreement yet. Beau was especially set on it because I was thick with Sid at the time and Maud with Doc, she loving tough cases.

"Easy now, lad, and you love me!" Sid thundered, again shooting Beau the "Hold it" look. "She's just a poor pagan trying to comfort you. Swallow your bile, you black villain, and perchance it will turn to poetry. Ah, did I touch you there? Confess, you are a poet."

THERE isn't much gets by Sid, though for a second I forgot my psychology and wondered if he knew what he was doing with his insights.

"Yes, I'm a poet, all right," the New Boy roared. "I'm Bruce Marchant, you bloody Zombies. I'm a poet in a world where even the lines of the King James and your precious Will whom you use for laughs aren't safe from Snakes' slime and the Spiders' dirty legs. Changing our history, stealing our certainties, claiming to be so blasted all-knowing and best intentioned and efficient, and what does it lead to? This bloody SI glove!"

He held up his black-gloved left

hand which still held the mate and he shook it.

"What's wrong with the Spider Issue gauntlet, heart of gold?" Sid demanded. "And you love us, tell us." While Erich laughed, "Consider yourself lucky, *Kamerad*. Mark and I didn't draw any gloves at all."

"What's wrong with it?" Bruce yelled. "The bloody things are both lefts!" He slammed it down on the floor.

We all howled, we couldn't help it. He turned his back on us and stamped off, though I guessed he would keep out of the Void. Erich squeezed my arm and said between gasps, "*Mein Gott, Liebchen*, what have I always told you about Soldiers? The bigger the gripe, the smaller the cause! It is infallible!"

One of us didn't laugh. Ever since the New Girl heard the name Bruce Marchant, she'd had a look in her eyes like she'd been given the sacrament. I was glad she'd got interested in something, because she'd been pretty much of a snoot and a wet blanket up until now, although she'd come to the Place with the recommendation of having been a real whoopee girl in London and New York in the Twenties. She looked disapprovingly at us as she gathered up the tray and stuff, not forgetting the glove, which she placed on the center of the tray like a holy relic.

BEAU cut over and tried to talk to her, but she ghosted past him and once again he couldn't do anything because of the tray in his hands. He came over and got rid of the drinks quick. I took a big gulp right away because I saw the New Girl stepping through the screen into Surgery and I hate to be reminded we have it and I'm glad Doc is too drunk to use it, some of the Arachnoid surgical techniques being very sickening as I know only too well from a personal experience that is number one on my list of things to be forgotten.

By that time, Bruce had come back to us, saying in a carefully hard voice, "Look here, it's not the dashed glove itself, as you very well know, you howling Demons."

"What is it then, noble heart?" Sid asked, his grizzled gold beard heightening the effect of innocent receptivity.

"It's the principle of the thing," Bruce said, looking around sharply, but none of us cracked a smile. "It's this mucking inefficiency and death of the cosmos—and don't tell me that isn't in the cards!—masquerading as benign omniscient authority. The Spiders—and we don't know who they are ultimately; it's just a name; we see only agents like ourselves—the Spiders pluck us from the quiet graves of our lifelines—"

"Is that bad, lad?" Sid mur-

mured, innocently straight-faced.

"—and Resurrect us if they can and then tell us we must fight another time-traveling power called the Snakes — just a name, too — which is bent on perverting and enslaving the whole cosmos, past, present and future."

"And isn't it, lad?"

"Before we're properly awake, we're Recruited into the Big Time and hustled into tunnels and burrows outside our space-time, these miserable closets, gray sacks, puss pockets—no offense to this Place—that the Spiders have created, maybe by gigantic implosions, but no one knows for certain, and then we're sent off on all sorts of missions into the past and future to change history in ways that are supposed to thwart the Snakes."

"True, lad."

"And from then on, the pace is so flaming hot and heavy, the shocks come so fast, our emotions are wrenched in so many directions, our public and private metaphysics distorted so insanely, the deepest thread of reality we cling to tied in such bloody knots, that we never can get things straight."

"We've all felt that way, lad," Sid said soberly; Beau nodded his sleek death's head; "You should have seen me, *Kamerad*, my first fifty sleeps," Erich put in; while I added, "Us girls, too, Bruce."

"Oh, I know I'll get hardened to it, and don't think I can't. It's not that," Bruce said harshly. "And I wouldn't mind the personal confusion, the mess it's made of my spirit, I wouldn't even mind remaking history and destroying priceless, once-called imperishable beauties of the past, if I felt it were for the best. The Spiders assure us that, to thwart the Snakes, it is all-important that the West ultimately defeat the East. But what have they done to achieve this? I'll give you some beautiful examples. To stabilize power in the early Mediterranean world, they have built up Crete at the expense of Greece, making Athens a ghost city, Plato a trivial fabulist, and putting all Greek culture in a minor key."

"YOU got time for culture?" I heard myself say and I clapped my hand over my mouth in gentle reproof.

"But *you* remember the dialogues, lad," Sid observed. "And rail not at Crete—I have a sweet Keftian friend."

"For how long will I remember Plato's dialogues? And who after me?" Bruce challenged. "Here's another. The Spiders want Rome powerful and, to date, they've helped Rome so much that she collapses in a blaze of German and Parthian invasions a few years after the death of Julius Caesar."

This time it was Beau who

butted in. Most everybody in the Place loves these bull sessions. "You omit to mention, sir, that Rome's newest downfall is directly due to the Unholy Triple Alliance the Snakes have fomented between the Eastern Classical World, Mohammedanized Christianity, and Marxist Communism, trying to pass the torch of power futurewards by way of Byzantium and the Eastern Church, without ever letting it pass into the hands of the Spider West. That, sir, is the Snakes' Three-Thousand-Year Plan which we are fighting against, striving to revive Rome's glories."

"Striving is the word for it," Bruce snapped. "Here's yet another example. To beat Russia, the Spiders kept England and America out of World War Two, thereby ensuring a German invasion of the New World and creating a Nazi empire stretching from the salt mines of Siberia to the plantations of Iowa, from Nizhni Novgorod to Kansas City!"

He stopped and my short hairs prickled. Behind me, someone was chanting in a weird spiritless voice, like footsteps in hard snow.

"*Salz, Salz, bringe Salz. Kein' Peitsch', gnädige Herren. Salz, Salz, Salz.*"

I turned and there was Doc waltzing toward us with little tiny steps, bent over so low that the ends of his shawl touched the floor, his head crooked up sideways and looking through us.

I knew then, but Erich translated softly. "'Salt, salt, I bring salt. No whip, merciful sirs.' He is speaking to my countrymen in their language." Doc had spent his last months in a Nazi-operated salt mine.

HE saw us and got up, straightening his top hat very carefully. He frowned hard while my heart thumped half a dozen times. Then his face slackened, he shrugged his shoulders and muttered, "*Nichevo.*"

"And it does not matter, sir," Beau translated, but directing his remark at Bruce. "True, great civilizations have been dwarfed or broken by the Change War. But others, once crushed in the bud, have bloomed. In the 1870s, I traveled a Mississippi that had never known Grant's gunboats. I studied piano, languages, and the laws of chance under the greatest European masters at the University of Vicksburg."

"And you think your pipsqueak steamboat culture is compensation for —" Bruce began but, "Prithee none of that, lad," Sid interrupted smartly. "Nations are as equal as so many madmen or drunkards, and I'll drink dead drunk the man who disputes me. Hear reason: nations are not so puny as to shrivel and vanish at

the first tampering with their past, no, nor with the tenth. Nations are monsters, boy, with guts of iron and nerves of brass. Waste not your pity on them."

"True indeed, sir," Beau pressed, cooler and keener for the attack on his Greater South. "Most of us enter the Change World with the false metaphysic that the slightest change in the past — a grain of dust misplaced—will transform the whole future. It is a long while before we accept with our minds as well as our intellects the law of the Conservation of Reality: that when the past is changed, the future changes barely enough to adjust, barely enough to admit the new data. The Change Winds meet maximum resistance always. Otherwise the first operation in Babylonia would have wiped out New Orleans, Sheffield, Stuttgart, and Maud Davies' birthplace on Ganymede!

"Note how the gap left by Rome's collapse was filled by the imperialistic and Christianized Germans. Only an expert Demon historian can tell the difference in most ages between the former Latin and the present Gothic Catholic Church. As you yourself, sir, said of Greece, it is as if an old melody were shifted into a slightly different key. In the wake of a Big Change, cultures and individuals are transposed, it's true, yet in the main they continue much as they were, except for the usual scattering of unfortunate but statistically meaningless accidents."

"All right, you bloody savants—maybe I pushed my point too far," Bruce growled. "But if you want variety, give a thought to the rotten methods we use in our wonderful Change War. Poisoning Churchill and Cleopatra. Kidnapping Einstein when he's a baby."

"The Snakes did it first," I reminded him.

"Yes, and we copied them. How resourceful does that make us?" he retorted, arguing like a woman. "If we need Einstein, why don't we Resurrect him, deal with him as a man?"

BEAU said, serving his culture in slightly thicker slices, *"Pardonnez-moi,* but when you have enjoyed your status as Doubleganger a *soupcon* longer, you will understand that great men can rarely be Resurrected. Their beings are too crystalized, sir, their lifelines too tough."

"Pardon me, but I think that's rot. I believe that most great men refuse to make the bargain with the Snakes, or with us Spiders either. They scorn Resurrection at the price demanded."

"Brother, they ain't that great," I whispered, while Beau glided on with, "However that may be, you have accepted Resurrection, sir, and so incurred an obligation

which you as a gentleman must honor."

"I accepted Resurrection all right," Bruce said, a glare coming into his eyes. "When they pulled me out of my line at Passchendaele in '17 ten minutes before I died, I grabbed at the offer of life like a drunkard grabs at a drink the morning after. But even then I thought I was also seizing a chance to undo historic wrongs, work for peace." His voice was getting wilder all the time. Just beyond our circle, I noticed the New Girl watching him worshipfully. "But what did I find the Spiders wanted me for? Only to fight more wars, over and over again, make them crueler and stinkinger, cut the swath of death a little wider with each Big Change, work our way a little closer to the death of the cosmos."

Sid touched my wrist and, as Bruce raved on, he whispered to me, "What kind of ball, think you, will please and so quench this firebrained rogue? And you love me, discover it."

I whispered back without taking my eyes off Bruce either, "I know somebody who'll be happy to put on any kind of ball he wants, if he'll just notice her."

"The New Girl, sweetling? 'Tis well. This rogue speaks like an angry angel. It touches my heart and I like it not."

Bruce was saying hoarsely but loudly, "And so we're sent on operations in the past and from each of those operations the Change Winds blow futurewards, swiftly or slowly according to the opposition they breast, sometimes rippling into each other, and any one of those Winds may shift the date of our own death ahead of the date of our Resurrection, so that in an instant—even here, outside the cosmos—we may molder and rot or crumble to dust and vanish away. The wind with our name in it may leak through the Door."

FACES hardened at that, because it's bad form to mention Change Death, and Erich flared out with, "*Halt's Maul, Kamarad!* There's always another Resurrection."

But Bruce didn't keep his mouth shut. He said, "Is there? I know the Spiders promise it, but even if they do go back and cut another Doubleganger from my lifeline, is he me?" He slapped his chest with his bare hand. "I don't think so. And even if he is me, with unbroken consciousness, why's he been Resurrected again? Just to refight more wars and face more Change Death for the sake of an almighty power—" his voice was rising to a climax — "an almighty power so bloody ineffectual, it can't furnish one poor Soldier pulled out of the mud of Passchendaele, one miserable Change

Commando, one Godforsaken Recuperee a proper issue of equipment!"

And he held out his bare right hand toward us, fingers spread a little, as if it were the most amazing object and most deserving of outraged sympathy in the whole world.

The New Girl's timing was perfect. She whisked through us, and before he could so much as wiggle the fingers, she whipped a black gauntleted glove on it and anyone could see that it fitted his hand perfectly.

This time our laughing beat the other. We collapsed and slopped our drinks and pounded each other on the back and then started all over.

"*Ach, der Handschuh, Liebchen!* Where'd she get it?" Erich gasped in my ear.

"Probably just turned the other one inside out—that turns a left into a right—I've done it myself," I wheezed, collapsing again at the idea.

"That would put the lining outside," he objected.

"Then I don't know," I said. "We got all sorts of junk in Stores."

"It doesn't matter, *Liebchen*," he assured me. "*Ach, der Handschuh!*"

All through it, Bruce just stood there admiring the glove, moving the fingers a little now and then, and the New Girl stood watching him as if he were eating a cake she'd baked.

WHEN the hysteria quieted down, he looked up at her with a big smile. "What did you say your name was?"

"Lili," she said, and believe you me, she was Lili to me even in my thoughts from then on, for the way she'd handled that lunatic.

"Lilian Foster," she explained. "I'm English also. Mr. Marchant, I've read *A Young Man's Fancy* I don't know how many times."

"You have? It's wretched stuff. From the Dark Ages—I mean my Cambridge days. In the trenches, I was working up some poems that were rather better."

"I won't hear you say that. But I'd be terribly thrilled to hear the new ones. Oh, Mr. Marchant, it was so strange to hear you call it Passiondale."

"Why, if I may ask?"

"Because that's the way I pronounce it to myself. But I looked it up and it's more like Pas-ken-DA-luh."

"Bless you! All the Tommies called it Passiondale, just as they called Ypres Wipers."

"How interesting. You know, Mr. Marchant, I'll wager we were Recruited in the same operation, summer of 1917. I'd got to France as a Red Cross nurse, but they found out my age and were going to send me back."

"How old were you — are you? Same thing, I mean to say."

"Seventeen."

"Seventeen in '17," Bruce murmured, his blue eyes glassy.

It was real corny dialogue and I couldn't resent the humorous leer Erich gave me as we listened to them, as if to say, "Ain't it nice, *Liebchen*, Bruce has a silly little English schoolgirl to occupy him between operations?"

Just the same, as I watched Lili in her dark bangs and pearl necklace and tight little gray dress that reached barely to her knees, and Bruce hulking over her tenderly in his snazzy hussar's rig, I knew that I was seeing the start of something that hadn't been part of me since Dave died fighting Franco years before I got on the Big Time, the sort of thing that almost made me wish there could be children in the Change World. I wondered why I'd never thought of trying to work things so that Dave got Resurrected and I told myself: no, it's all changed, I've changed, better the Change Winds don't disturb Dave or I know about it.

"No, I didn't die in 1917 — I was merely Recruited then," Lili was telling Bruce. "I lived all through the Twenties, as you can see from the way I dress. But let's not talk about that, shall we? Oh, Mr. Marchant, do you think you can possibly remember any of those poems you started in the trenches? I can't fancy them bettering your sonnet that concludes with, 'The bough swings in the wind, the night is deep; Look at the stars, poor little ape, and sleep.'"

That one almost made me whoop—what monkeys we are, I thought—though I'd be the first to admit that the best line to use on a poet is one of his own—in fact, as many as possible. I decided I could safely forget our little Britons and devote myself to Erich or whatever needed me.

CHAPTER 3

> Hell is the place for me. For to Hell go the fine churchmen, and the fine knights, killed in the tourney or in some grand war, the brave soldiers and the gallant gentlemen. With them will I go. There go also the fair gracious ladies who have lovers two or three beside their lord. There go the gold and the silver, the sables and ermine. There go the harpers and the minstrels and the kings of the earth.
>
> — Aucassin

NINE FOR A PARTY

I EXCHANGED my drink for a new one from another tray Beau was bringing around. The gray of the Void was beginning to look real pleasant, like warm thick mist with millions of tiny diamonds floating in it. Doc was

sitting grandly at the bar with a steaming tumbler of tea — a chaser, I guess, since he was just putting down a shot glass. Sid was talking to Erich and laughing at the same time and I said to myself it begins to feel like a party, but something's lacking.

It wasn't anything to do with the Major Maintainer; its telltale was glowing a steady red like a nice little home fire amid the tight cluster of dials that included all the controls except the lonely and frightening Introversion switch that was never touched. Then Maud's couch curtains winked out and there were she and the Roman sitting quietly side by side.

He looked down at his shiny boots and the rest of his black duds like he was just waking up and couldn't believe it all, and he said, "*Omnia mutantur, nos et mutamur in illis*," and I raised my eyebrows at Beau, who was taking the tray back, and he did proud by old Vicksburg by translating: "All things change and we change with them."

Then Mark slowly looked around at us, and I can testify that a Roman smile is just as warm as any other nationality, and he finally said, "We are nine, the proper number for a party. The couches, too. It is good."

Maud chuckled proudly and Erich shouted, "Welcome back from the Void, *Kamerad*," and then, because he's German and thinks all parties have to be noisy and satirically pompous, he jumped on a couch and announced, "*Herren und Damen*, permit me to introduce the noblest Roman of them all, Marcus Vipsaius Niger, legate to Nero Claudius (called Germanicus in a former time stream) and who in 763 A.U.C. (Correct, Mark? It means 10 A.D., you meatheads!) died bravely fighting the Parthians and the Snakes in the Battle of Alexandria. *Hoch, hoch, hoch!*"

WE all swung our glasses and cheered with him and Sid yelled at Erich, "Keep your feet off the furniture, you unschooled rogue," and grinned and boomed at all three hussars, "Take your ease, Recuperees," and Maud and Mark got their drinks, the Roman paining Beau by refusing Falernian wine in favor of scotch and soda, and right away everyone was talking a mile a minute.

We had a lot to catch up on. There was the usual yak about the war—"The Snakes are laying mine fields in the Void," "I don't believe it, how can you mine nothing?" — and the shortages—bourbon, bobby pins, and the stabilitin that would have brought Mark out of it faster —and what had become of people —"Marcia? Oh, she's not around any more," (She'd been caught in a Change Gale and green and

stinking in five seconds, but I wasn't going to say that) — and Mark had to be told about Bruce's glove, which convulsed us all over again, and the Roman remembered a legionary who had carried a gripe all the way to Octavius because he'd accidentally been issued the unbelievable luxury item sugar instead of the usual salt, and Erich asked Sid if he had any new Ghost-girls in stock and Sid sucked his beard like the old goat he is. "Dost thou ask me, lusty Allemand? Nay, there are several great beauties, amongst them an Austrian countess from Strauss's Vienna, and if it were not for sweetling here . . . Mnnnn."

I poked a finger in Erich's chest between two of the bright buttons with their tiny death's heads. "You, my little von Hohenwald, are a menace to us real girls. You have too much of a thing about the unawakened, ghost kind."

He called me his little Demon and hugged me a bit too hard to prove it wasn't so, and then he suggested we show Bruce the Art Gallery. I thought this was a real brilliant idea, but when I tried to argue him out of it, he got stubborn. Bruce and Lili were willing to do anything anyone wanted them to, though not so willing to pay any attention while doing it. The saber cut was just a thin red line on his cheek; she'd washed away all the dried blood.

The Gallery gets you, though. It's a bunch of paintings and sculptures and especially odd knick-knacks, all made by Soldiers recuperating here, and a lot of them telling about the Change War from the stuff they're made of — brass cartridges, flaked flint, bits of ancient pottery glued into futuristic shapes, mashed-up Incan gold rebeaten by a Martian, whorls of beady Lunan wire, a picture in tempera on a crinkle-cracked thick round of quartz that had filled a starship porthole, a Sumerian inscription chiseled into a brick from an atomic oven.

THERE are a lot of things in the Gallery and I can always find some I haven't ever seen before. It gets you, as I say, thinking about the guys that made them and their thoughts and the far times and places they came from, and sometimes, when I'm feeling low, I'll come and look at them so I'll feel still lower and get inspired to kick myself back into a good temper. It's the only history of the Place there is and it doesn't change a great deal, because the things in it and the feelings that went into them resist the Change Winds better than anything else.

Right now, Erich's witty lecture was bouncing off the big ears I hide under my pageboy bob and I was thinking how awful it is that for us that there's not only change

but Change. You don't know from one minute to the next whether a mood or idea you've got is really new or just welling up into you because the past has been altered by the Spiders or Snakes.

Change Winds can blow not only death but anything short of it, down to the featheriest fancy. They blow thousands of times faster than time moves, but no one can say how much faster or how far one of them will travel or what damage it'll do or how soon it'll damp out. The Big Time isn't the little time.

And then, for the Demons, there's the fear that our personality will just fade and someone else climb into the driver's seat and us not even know. Of course, we Demons are supposed to be able to remember through Change and in spite of it; that's why we are Demons and not Ghosts like the other Doublegangers, or merely Zombies or Unborn and nothing more, and as Beau truly said, there aren't any great men among us—and blamed few of the masses, either—we're a rare sort of people and that's why the Spiders have to Recruit us where they find us without caring about our previous knowledge and background, a Foreign Legion of time, a strange kind of folk, bright but always in the background, with built-in nostalgia and cynicism, as adaptable as Centaurian shape-changers but with memories as long as a Lunan's six arms, a kind of Change People, you might say, the cream of the damned.

But sometimes I wonder if our memories are as good as we think they are and if the whole past wasn't once entirely different from anything we remember, and we've forgotten that we forgot.

As I say, the Gallery gets you feeling real low, and so now I said to myself, "Back to your lousy little commandant, kid," and gave myself a stiff boot.

Erich was holding up a green bowl with gold dolphins or spaceships on it and saying, "And, to my mind, this proves that Etruscan art is derived from Egyptian. Don't you agree, Bruce?"

Bruce looked up, all smiles from Lili, and said, "What was that, dear chap?"

ERICH'S forehead got dark as the Door and I was glad the hussars had parked their sabers along with their shakos, but before he could even get out a Jerry cussword, Doc breezed up in that plateau-state of drunkenness so like hypnotized sobriety, moving as if he were on a dolly, ghosted the bowl out of Erich's hand, said, "A beautiful specimen of Middle Systemic Venusian. When Eight-aitch finished it, he told me you couldn't look at it and not feel the waves of the Northern Venu-

sian Shallows rippling around your hoofs. But it might look better inverted. I wonder. Who are you, young officer? *Nichevo,*" and he carefully put the bowl back on its shelf and rolled on.

It's a fact that Doc knows the Art Gallery better than any of us, really by heart, he being the oldest inhabitant, though he maybe picked a bad time to show off his knowledge. Erich was going to take out after him, but I said, "Nix, *Kamerad,* remember gloves and sugar," and he contented himself with complaining, "That *nichevo*—it's so gloomy and hopeless, *ungeheuerlich.* I tell you, *Liebchen,* they shouldn't have Russians working for the Spiders, not even as Entertainers."

I grinned at him and squeezed his hand. "Not much entertainment in Doc these days, is there?" I agreed.

He grinned back at me a shade sheepishly and his face smoothed and his blue eyes looked sweet again for a second and he said, "I shouldn't want to claw out at people that way, Greta, but at times I am just a jealous old man," which is not entirely true, as he isn't a day over thirty-three, although his hair is nearly white.

Our lovers had drifted on a few steps until they were almost fading into the Surgery screen. It was the last spot I would have picked for the formal preliminaries to a little British smootching, but Lili probably didn't share my prejudices, though I remembered she'd told me she'd served a brief hitch in an Arachnoid Field Hospital before being transferred to the Place.

But she couldn't have had anything like the experience I'd had during my short and sour career as a Spider nurse, when I'd acquired my best-hated nightmare and flopped completely (jobwise, but on the floor, too) at seeing a doctor flick a switch and a being, badly injured but human, turn into a long cluster of glistening strange fruit—ugh, it always makes me want to toss my cookies and my buttons. And to think that dear old Daddy Anton wanted his Greta chile to be a doctor.

WELL, I could see this wasn't getting me anywhere I wanted to go, and after all there was a party going on.

Doc was babbling something at a great rate to Sid—I just hoped Doc wouldn't get inspired to go into his animal imitations, which sound pretty fierce and once seriously offended some recuperating ETs.

Maud was demonstrating to Mark a 23rd Century twostep and Beau sat down at the piano and improvised softly on her rhythm.

As the deep-thrumming relaxing notes hit us, Erich's face brightened and he dragged me over.

Pleasantly soon I had my feet off the diamond-rough floor, which we don't carpet because most of the ETs, the dear boys, like it hard, and I was shouldering back deep into the couch nearest the piano, with cushions all around me and a fresh drink in my hand, while my Nazi boy friend was getting ready to discharge his *Weltschmerz* as song, which didn't alarm me too much, as his baritone is passable.

Things felt real good, like the Maintainer was just idling to keep the Place in existence and moored to the cosmos, not exerting itself at all or at most taking an occasional lazy paddle stroke. At times the Place's loneliness can be happy and comfortable.

Then Beau raised an eyebrow at Erich, who nodded, and next thing they were launched into a song we all know, though I've never found out where it originally came from. This time it made me think of Lili, and I wondered why —and why it's a tradition at Recuperation Stations to call the new girl Lili, though in this case it happened to be her real name.

Standing in the Doorway just
outside of space,
Winds of Change blow 'round
you but don't touch your face;
You smile as you whisper
tenderly,
"Please cross to me, Recuperee;
"The operation's over, come
in and close the Door."

CHAPTER 4

De Bailhache, Fresca, Mrs.
Cammel, whirled
Beyond the circuit of the
shuddering Bear
In fractured atoms.

—Eliot

S O S FROM NOWHERE

I REALIZED the piano had deserted Erich and I cranked my head up and saw Beau, Maud and Sid streaking for the control divan. The Major Maintainer was blinking emergency-green and fast, but the code was plain enough for even me to recognize the Spider distress call and for a second I felt just sick. Then Erich blew out his reserve breath in the middle of "Door" and I gave myself another of those helpful mental boots at the base of the spine and we hurried after them toward the center of the Place along with Mark.

The blinks faded as we got there and Sid told us not to move because we were making shadows. He glued an eye to the telltale and we held still as statues as he caressed the dials like he was making love.

One sensitive hand flicked out past the Introversion switch over to the Minor Maintainer and right away the Place was dark as your soul and there was nothing for me but Erich's arm and the knowledge that Sid was nursing a green light I couldn't even see, although

my eyes had plenty time to accommodate.

Then the green light finally came back very slowly and I could see the dear reliable old face—the green-gold beard making him look like a merman—and then the telltale flared bright and Sid flicked on the Place lights and I leaned back.

"That nails them, lads, whoever and whenever they may be. Get ready for a pick-up."

Beau, who was closest of course, looked at him sharply. Sid shrugged uneasily. "Meseemed at first it was from our own globe a thousand years before our Lord, but that indication flickered and faded like witchfire. As it is, the call comes from something smaller than the Place and certes adrift from the cosmos. Meseemed too at one point I knew the fist of the caller —an antipodean atomicist named Benson-Carter — but that likewise changed."

Beau said, "We're not in the right phase of the cosmos-Places rhythm for a pick-up, are we, sir?"

Sid answered, "Ordinarily not, boy."

Beau continued, "I didn't think we had any pick-ups scheduled. Or stand-by orders."

Sid said, "We haven't."

Mark's eyes glowed. He tapped Erich on the shoulder. "An octavian denarius against ten Reichsmarks it is a Snake trap."

Erich's grin showed his teeth. "Make it first through the Door next operation and I'm on."

IT didn't take that to tell me things were serious, or the thought that there's always a first time for bumping into something from really outside the cosmos. The Snakes have broken our code more than once. Maud was quietly serving out weapons and Doc was helping her. Only Bruce and Lili stood off. But they were watching.

The telltale brightened. Sid reached toward the Maintainer, saying, "All right, my hearties. Remember, through this Doorway pass the fishiest finaglers in and out of the cosmos."

The Door appeared to the left and above where it should be and darkened much too fast. There was a gust of stale salt seawind, if that makes sense, but no stepped-up Change Winds I could tell—and I had been bracing myself against them. The Door got inky and there was a flicker of gray fur whips and a flash of copper flesh and gilt and something dark and a clump of hoofs and Erich was sighting a stun gun across his left forearm, and then the Door had vanished like that and a tentacled silvery Lunan and a Venusian satyr were coming straight toward us.

The Lunan was hugging a pile

of clothes and weapons. The satyr was helping a wasp-waisted woman carry a heavy-looking bronze chest. The woman was wearing a short skirt and high-collared bolero jacket of leather so dark brown it was almost black. She had a two-horned *petsofa* hairdress and she was boldly gilded here and there and wore sandals and copper anklets and wristlets—one of them a copper-plated Caller—and from her wide copper belt hung a short-handled double-headed ax. She was dark-complexioned and her forehead and chin receded, but the effect was anything but weak; she had a face like a beautiful arrowhead—and a familiar one, by golly!

But before I could say, "Kabysia Labrys," Maud shrilly beat me to it with, "It's Kaby with two friends. Break out a couple of Ghostgirls."

And then I saw it really was old-home week because I recognized my Lunan boy friend Ilhilihis, and in the midst of all the confusion I got a nice kick out of knowing I was getting so I could tell the personality of one silver-furred muzzle from another.

They reached the control divan and Illy dumped his load and the others let down the chest, and Kaby staggered but shook off the two ETs when they started to support her, and she looked daggers at Sid when he tried to do the same, although she's his "sweet Keftian friend" he'd mentioned to Bruce.

SHE leaned straight-armed on the divan and took two gasping breaths so deep that the ridges of her spine showed through her brown-skinned waist, and then she threw up her head and commanded, "Wine!"

While Beau was rushing it, Sid tried to take her hand again, saying, "Sweetling, I'd never heard you call before and knew not this pretty little fist," but she ripped out, "Save your comfort for the Lunan," and I looked and saw—Hey, Zeus!—that one of Ilhilihis' six tentacles was lopped off halfway.

That was for me, and, going to him, I fast briefed myself: "Remember, he only weighs fifty pounds for all he's seven feet high; he doesn't like low sounds or to be grabbed; the two legs aren't tentacles and don't act the same; uses them for long walks, tentacles for leaps; uses tentacles for close vision too and for manipulation, of course; extended, they mean he's at ease; retracted, on guard or nervous; sharply retracted, disgusted; greeting—"

Just then, one of them swept across my face like a sweet-smelling feather duster and I said, "Illy, man, it's been a lot of sleeps," and brushed my fingers across his muzzle. It still took a little self-con-

trol not to hug him, and I did reach a little cluckingly for his lopped tentacle, but he wafted it away from me and the little voice-box belted to his side squeaked, "Naughty, naughty. Papa will fix his little old self. Greta girl, ever bandaged even a Terra octopus?"

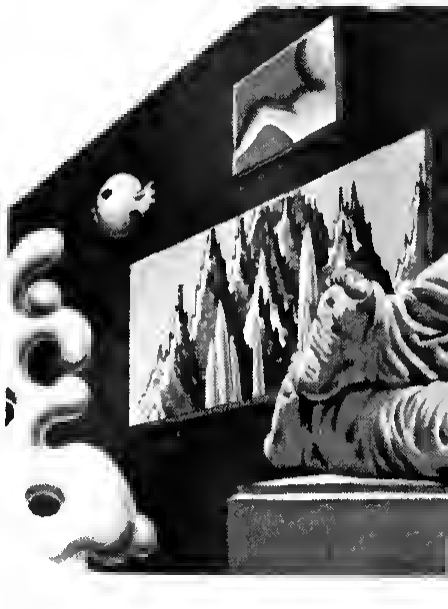
I had, an intelligent one from around a quarter billion A.D., but I didn't tell him so. I stood and let him talk to the palm of my hand with one of his tentacles—I don't savvy feather-talk but it feels good, though I've often wondered who taught him English—and watched him use a couple others to whisk a sort of Lunan band-aid out of his pouch and cap his wound with it.

Meanwhile, the satyr knelt over the bronze chest, which was decorated with little death's heads and crosses with hoops at the top and swastikas, but looking much older than Nazi, and the satyr said to Sid, "Quick thinkin, Gov, when ya saw the Door comin in high n soffened up gravty unner it, but cud I hav sum hep now?"

Sid touched the Minor Maintainer and we all got very light and my stomach did a flip-flop while the satyr piled on the chest the clothes and weapons that Illy had been carrying and pranced off with it all and carefully put it down at the end of the bar. I decided the satyr's English instructor must have been quite a character, too. Wish I'd met him—her—it.

Sid thought to ask Illy if he wanted Moon-normal gravity in one sector, but my boy likes to mix, and being such a lightweight, Earth-normal gravity doesn't bother him. As he said to me once, "Would Jovian gravity bother a beetle, Greta girl?"

I ASKED Illy about the satyr and he squeaked that his name was Sevensee and that he'd never met him before this operation. I knew the satyrs were from a billion years in the future, just as the Loonies were from a billion in the past, and I thought—Kreesed





us!—but it must have been a real big or emergency-like operation to have the Spiders using those two for it, with two billion years between them—a time-difference that gives you a feeling of awe for a second, you know.

I started to ask Illy about it, but just then Beau came scampering back from the bar with a big red-and-black earthenware goblet of wine—we try to keep a variety of drinking tools in stock so folks will feel more at home. Kaby grabbed it from him and drained most of it in one swallow and then smashed it on the floor. She does things like that, though Sid's tried to teach her better. Then she stared at what she was thinking about until the whites showed all around her eyes and her lips pulled way back from her teeth and she looked a lot less human than the two ETs, just like a fury. Only a time traveler knows how like the wild murals and engravings of them some of the ancients can look.

My hair stood up at the screech she let out. She smashed a fist into the divan and cried, "Goddess! Must I see Crete destroyed, revived, and now destroyed again? It is too much for your servant."

Personally, I thought she could stand anything.

There was a rush of questions at what she said about Crete—I asked one of them, for the news certainly frightened me—but she shot up her arm straight for silence and took a deep breath and began.

"In the balance hung the battle. Rowing like black centipedes, the Dorian hulls bore down on our outnumbered ships. On the bright beach, masked by rocks, Sevensee and I stood by the needle gun, ready to give the black hulls silent wounds. Beside us was Ilhilihis, suited as a sea monster. But then . . . then . . ."

Then I saw she wasn't altogether the iron babe, for her voice broke and she started to shake and to sob rackingly, although her face was still a mask of rage, and she threw up the wine. Sid stepped in and made her stop, which I think he'd been wanting to do all along.

CHAPTER 5

Whenever I take up a newspaper and read it, I fancy I see ghosts creeping between the lines. There must be ghosts all over the world. They must be as countless as the grains of the sands, it seems to me.

—Ibsen

SID INSISTS ON GHOSTGIRLS

MY Elizabethan boy friend put his fists on his hips and laid down the law to us as if we were a lot of nervous children who'd been playing too hard.

"Look you, masters, this is a Re-

cuperation Station and I am running it as such. A plague of all operations! I care not if the frame of things disjoints and the whole Change World goes to ruin, but you, warrior maid, are going to rest and drink more wine slowly before you tell your tale and your colleagues are going to be properly companioned. No questions, anyone. Beau, and you love us, give us a lively tune."

Kaby relaxed a little and let him put his hand carefully against her back in token of support and she said grudgingly, "All right, Fat Belly."

Then, so help me, to the tune of the Muskrat Ramble, which I'd taught Beau, we got girls for those two ETs and everybody properly paired up.

Right here I want to point out that a lot of the things they say in the Change World about Recuperation Stations simply aren't so —and anyway they always leave out nine-tenths of it. The Soldiers that come through the Door are looking for a good time, sure, but they're hurt real bad too, every one of them, deep down in their minds and hearts, if not always in their bodies or so you can see it right away.

Believe me, a temporal operation is no joke, and to start with, there isn't one person in a hundred who can endure to be cut from his lifeline and become a really wide-awake Doubleganger—a Demon, that is—let alone a Soldier. What does a badly hurt and mixed-up creature need who's been fighting hard? *One individual* to look out for him and feel for him and patch him up, and it helps if the one is of the opposite sex—that's something that goes beyond species.

There's your basis for the Place and the wild way it goes about its work, and also for most other Recuperation Stations or Entertainment Spots. The name Entertainer can be misleading, but I like it. She's got to be a lot more than a good party girl—or boy—though she's got to be that too. She's got to be a nurse and a psychologist and an actress and a mother and a practical ethnologist and a lot of things with longer names—and a reliable friend.

NONE of us are all those things perfectly or even near it. We just try. But when the call comes, Entertainers have to forget grudges and gripes and envies and jealousies—and remember, they're lively people with sharp emotions—because there isn't any time then for anything but *help and don't ask who!*

And, deep inside her, a good Entertainer doesn't care who. Take the way it shaped up this time. It was pretty clear to me I ought to shift to Illy, although I wasn't quite easy in my mind about leav-

ing Erich, because the Lunan was a long time from home and, after all, Erich was among anthropoids. Ilhilihis needed someone who was *simpatico.*

I like Illy and not just because he is a sort of tall cross between a spider monkey and a persian cat —though that is a handsome combo when you come to think of it. I like him for himself. So when he came in all lopped and shaky after a mean operation, I was the right person to look out for him. Now I've made my little speech and know-nothings in the Change World can go on making their bum jokes. But I ask you, how could an arrangement between Illy and me be anything but Platonic?

We might have had some octopoid girls and nymphs in stock—Sid couldn't be sure until he checked—but Ilhilihis and Sevensee voted for real people and I knew Sid saw it their way. Maud squeezed Mark's hand and tripped over to Sevensee ("Those are sharp hoofs you got, man"—she's picked up some of my language, like she has everything else), though Beau did frown over his shoulder at Lili from the piano, maybe to argue that she ought to take on the ET, as Mark had been a real casualty and could use live nursing. But it was plain as day to anybody but Beau that Bruce and Lili were a big thing and the last to be disturbed.

Erich acted stiffly hurt at losing me, but I knew he wasn't. He thinks he has a great technique with Ghostgirls and he likes to show it off, and he really is pretty slick at it, if you go for that sort of thing and — yang my yin! — who doesn't at times?

And when Sid formally wafted the Countess out of Stores—a real blonde stunner in a white satin hobble skirt with a white egret swaying up from her tiny hat, way ahead of Maud and Lili and me when it came to looks, though transparent as cigarette smoke — and when Erich clicked his heels and bowed over her hand and proudly conducted her to a couch, black Svengali to her Trilby, and started to German-talk some life into her with much head cocking and toothy smiling and a flow of witty flattery, and when she began to flirt back and the dream look in her eyes sharpened hungrily and focused on him — well, then I knew that Erich was happy and felt he was doing proud by the *Reichswehr.* No, my little commandant wasn't worrying me on that score.

MARK had drawn a Greek hetaera name of Phryne; I suppose not the one who maybe still does the famous courtroom striptease back in Athens, and he was waking her up with little sips of his scotch and soda, though,

from some looks he'd flashed, I got the idea Kaby was the kid he really went for. Sid was coaxing the fighting gal to take some high-energy bread and olives along with the wine, and, for a wonder, Doc seemed to be carrying on an animated and rational conversation with Sevensee and Maud, maybe comparing notes on the Northern Venusian Shallows, and Beau had got on to Panther Rag, and Bruce and Lili were leaning on the piano, smiling very appreciatively, but talking to each other a mile a minute.

Illy turned back from inspecting them all and squeaked, "Animals with clothes are so refreshing, dahling! Like you're all carrying banners!"

Maybe he had something there, though my banners were kind of Ash Wednesday, a charcoal gray sweater and skirt. He looked at my mouth with a tentacle to see how I was smiling and he squeaked softly, "Do I seem dull and commonplace to you, Greta girl, because I haven't got banners? Just another Zombie from a billion years in your past, as gray and lifeless as Luna is today, not as when she was a real dreamy sister planet simply bursting with air and water and feather forests. Or am I as strangely interesting to you as you are to me, girl from a billion years in my future?"

"Illy, you're sweet," I told him, giving him a little pat. I noticed his fur was still vibrating nervously and I decided the heck with Sid's orders, I'm going to pump him about what he was doing with Kaby and the satyr. Couldn't have him a billion years from home and bottled up, too. Besides, I was curious.

CHAPTER 6

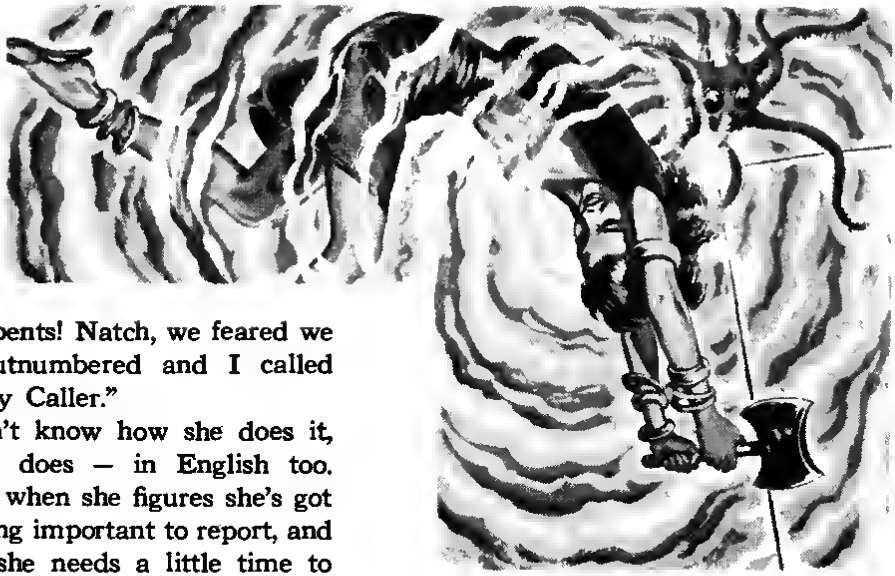
Maiden, Nymph, and Mother are the eternal royal Trinity of the island, and the Goddess, who is worshipped there in each of these aspects, as New Moon, Full Moon, and Old Moon, is the sovereign Deity.

— Graves

CRETE CIRCA 1300 B.C.

KABY pushed back at Sid some seconds of bread and olives, and, when he raised his bushy eyebrows, gave him a curt nod that meant she knew what she was doing. She stood up and sort of took a position. All the talk quieted down fast, even Bruce's and Lili's. Kaby's face and voice weren't strained now, but they weren't relaxed either.

"Woe to Spider! Woe to Cretan! Heavy is the news I bring you. Bear it bravely, like strong women. When we got the gun unlimbered, I heard seaweed fry and crackle. We three leaped behind the rock wall, saw our gun grow white as sunlight in a heat-ray of



the Serpents! Natch, we feared we were outnumbered and I called upon my Caller."

I don't know how she does it, but she does — in English too. That is, when she figures she's got something important to report, and maybe she needs a little time to get ready.

Beau claims that all the ancients fit their thoughts into measured lines as naturally as we pick a word that will do, but I'm not sure how good the Vicksburg language department is. Though why I should wonder about things like that when I've got Kaby spouting the stuff right in front of me, I don't know.

"But I didn't die there, kiddos. I still hoped to hurt the Greek ships, maybe with the Snake's own heat gun. So I quick tried to outflank them. My two comrades crawled beside me—they are males, but they have courage. Soon we spied the ambush-setters. They were Snakes and they were many, filthily disguised as Cretans."

There was an indignant murmur at this, for our cutthroat Change War has its code, the Soldiers tell me. Being an Entertainer, I don't have to say what I think.

"They had seen us when we saw them," Kaby swept on, "and they loosed a killing volley. Heat- and knife-rays struck about us in a storm of wind and fire, and the Lunan lost a feeler, fighting for Crete's Triple Goddess. So we dodged behind a sand hill, steered our flight back toward the water. It was awful, what we saw there: Crete's brave ships all sunk or sinking, blue sky sullied by their death-smoke. Once again the Greeks had licked us! — aided by the filthy Serpents.



"Round our wrecks, their black ships scurried, like black beetles, filth their diet, yet this day they dine on heroes. On the quiet sunlit beach there, I could feel a Change Gale blowing, working changes deep inside me, aches and pains that were a stranger's. Half my memories were doubled, half my lifeline crooked and twisted, three new moles upon my sword-hand. Goddess, Goddess, Triple Goddess—"

HER voice wavered and Sid reached out a hand, but she straightened her back.

"Triple Goddess, give me courage to tell everything that happened. We ran down into the water, hoping to escape by diving. We had hardly gotten under when the heat-rays hit above us, turning all the cool green surface to a roaring white inferno. But as I believe I told you, I was calling on my Caller, and a Door now opened to us, deep below the deadly steam-clouds. We dived in like frightened minnows and a lot of water with us."

Off Chicago's Gold Coast, Dave once gave me a lesson in skin-diving and, remembering it, I got a flash of Kaby's Door in the dark depths.

"For a moment, all was chaos. Then the Door slammed shut behind us. We'd been picked up in time's nick by—an Express Room of our Spiders!—sloshing two feet deep in water, much more cramped for space than this Place. It was manned by a magician, an old coot named Benson-Carter. He dispelled the water quickly and reported on his Caller. We'd got dry, were feeling human, Illy here had shed his swimsuit, when we looked at the Maintainer. It was glowing, changing, melting! And when Benson-Carter touched it, he fell backward—death was in him. Then the Void began to darken, narrow, shrink and close around us, so I called upon my Caller—without wasting time, let me tell you!

"We can't say for sure what was it slowly squeezed that sweet Express Room, but we fear the dirty Snakes have found a way to find our Places and attack outside the cosmos!—found the Spiderweb that links us in the Void's gray less-than-nothing."

No murmur this time. This reaction was genuine; we'd been hit where we lived and I could see everybody was scared as sick as I was. Except maybe Bruce and Lili, who were still holding hands and beaming gently. I decided they were the kind that love makes brave, which it doesn't do to me. It just gives me two people to worry about.

"I can see you dig our feelings," Kaby continued. "This thing scared the pants off of us. If we could have, we'd have even Intro-

verted the Maintainer, broken all the ties that bind us, chanced it incommunicado. But the little old Maintainer was a seething red-hot puddle filled with bubbles big as handballs. We sat tight and watched the Void close. I kept calling on my Caller."

I SQUEEZED my eyes shut, but that made it easier to see the three of them with the Void shutting down on them. (Was ours still behaving? Yes, Bibi Miriam.) Poetry or no poetry, it got me.

"Benson-Carter, lying dying, also thought the Snakes had done it. And he knew that death was in him, so he whispered me his mission, giving me precise instructions: how to press the seven death's hands, starting lockside counterclockwise, one, three, five, six, two, four, seven, then you have a half an hour; after you have pressed the seven, do not monkey with the buttons—get out fast and don't stop moving."

I wasn't getting this part and I couldn't see that anyone else was, though Bruce was whispering to Lili. I remembered seeing skulls engraved on the bronze chest. I looked at Illy and he nodded a tentacle and spread two to say, I guessed, that yes, Benson-Carter had said something like that, but no, Illy didn't know much about it.

"All these things and more he whispered," Kaby went on, "with the last gasps of his life-force, telling all his secret orders—for he'd not been sent to get us, he was on a separate mission, when he heard my SOSs. Sid, it's you he was to contact, as the first leg of his mission, pick up from you three black hussars, death's-head Demons, daring Soldiers, then to wait until the Places next match rhythm with the cosmos—matter of two mealtimes, barely—and to tune in northern Egypt in the age of the last Caesar, in the year of Rome's swift downfall, there to start an operation in a battle near a city named for Thrace's Alexander, there to change the course of battle, blow sky-high the stinking Serpents, all their agents, all their Zombies!

"Goddess, pardon, now I savvy how you've guided my least footstep, when I thought you'd gone and left me—for I flubbed your three-mole signal. We've found Sid's Place, that's the first leg, and I see the three black hussars, and we've brought with us the weapon and the Parthian disguises, salvaged from the doomed Express Room when your Door appeared in time's nick, and the Room around us closing spewed us through before it vanished with the corpse of Benson-Carter. Triple Goddess, draw the milk now from the womanhood I flaunt here and inject the blackest hatred! Vengeance now

upon the Serpents, vengeance sweet in northern Egypt, for your island, Crete, Goddess!—and a victory for the Spiders! Goddess, Goddess, we can swing it!"

The roar that made me try to stop my ears with my shoulders didn't come from Kaby — she'd spoken her piece — but from Sid. The dear boy was purple enough to make me want to remind him you can die of high blood pressure just as easy in the Change World.

"Dump me with ops! 'Sblood, I'll not endure it! Is this a battle post? They'll be mounting operations from field hospitals next. Kabysia Labrys, thou art mad to suggest it. And what's this prattle of locks, clocks, and death's heads, buttons and monkeys? This brabble, this farrago, this hocus-pocus! And where's the weapon you prate of? In that whoreson bronze casket, I suppose."

She nodded, looking blank and almost a little shy as poetic possession faded from her. Her answer came like its faltering last echo.

"It is nothing but a tiny tactical atomic bomb."

CHAPTER 7

After about 0.1 millisecond (one ten-thousandth part of a second) has elapsed, the radius of the ball of fire is some 45 feet, and the temperature is then in the vicinity of 300,000 degrees Centigrade. At this instant, the luminosity, as observed at a distance of 100,000 yards (5.7 miles), is approximately 100 times that of the sun as seen at the earth's surface. . . . the ball of fire expands very rapidly to its maximum radius of 450 feet within less than a second from the explosion.

—Los Alamos

TIME TO THINK

BROTHER, that was all we needed to make everybody but Kaby and the two ETs start yelping at once, me included. It may seem strange that Change People, able to whiz through time and space and roust around outside the cosmos and knowing at least by hearsay of weapons a billion years in the future, like the Mindbomb, should panic at being shut in with a little primitive mid-20th Century gadget. Well, they feel the same as atomic scientists would feel if a Bengal tiger were brought into their laboratory, neither more nor less scared.

I'm a moron at physics, but I do know the Fireball is bigger than the Place. Remember that, besides the bomb, we'd recently been presented with a lot of other fears we hadn't had time to cope with, especially the business of the Snakes having learned how to get at our Places and melt the Maintainers and collapse them. Not to mention

the general impression — first Saint Petersburg, then Crete — that the whole Change War was going against the Spiders.

Yet, in a free corner of my mind, I was shocked at how badly we were all panicking. It made me admit what I didn't like to: that we were all in pretty much the same state as Doc, except that the bottle didn't happen to be our out.

And had the rest of us been controlling our drinking so well lately?

Maud yelled, "Jettison it!" and pulled away from the satyr and ran from the bronze chest. Beau, harking back to what they'd thought of doing in the Express Room when it was too late, hissed, "Sirs, we must Introvert," and vaulted over the piano bench and legged it for the control divan. Erich seconded him with a white-faced *"Gott in Himmel, ja!"* from beside the surly, forgotten Countess, holding, by its slim stem, an empty, rose-stained wine glass.

I felt my mind flinch, because Introverting a Place is several degrees worse than foxholing. It's supposed not only to keep the Door tight shut, but also to lock it so even the Change Winds can't get through—cut the Place loose from the cosmos altogether.

I'd never talked with anyone from a Place that had been Introverted.

MARK dumped Phryne off his lap and ran after Maud. The Greek Ghostgirl, quite solid now, looked around with sleepy fear and fumbled her apple-green chiton together at the throat. She wrenched my attention away from everyone else for a moment, and I couldn't help wondering whether the person or Zombie back in the cosmos, from whose lifeline the Ghost has been taken, doesn't at least have strange dreams or thoughts when something like this happens.

Sid stopped Beau, though he almost got bowled over doing it, and he held the gambler away from the Maintainer in a bear hug and bellowed over his shoulders, "Masters, are you mad? Have you lost your wits? Maud! Mark! Marcus! Magdalene! On your lives, unhand that casket!"

Maud had swept the clothes and bows and quivers and stuff off it and was dragging it out from the bar toward the Door sector, so as to dump it through fast when we got one, I guess, while Mark acted as if he were trying to help her and wrestle it away from her at the same time.

They kept on as if they hadn't heard a word Sid said, with Mark yelling, "Let go, *meretrix!* This holds Rome's answer to Parthia on the Nile."

Kaby watched them as if she wanted to help Mark but scorned

to scuffle with a mere — well, Mark had said it in Latin, I guess —call girl.

Then, on the top of the bronze chest, I saw those seven lousy skulls starting at the lock as plain as if they'd been under a magnifying glass, though ordinarily they'd have been a vague circle to my eyes at the distance, and I lost my mind and started to run in the opposite direction, but Illy whipped three tentacles around me, gentle-like, and squeaked, "Easy now, Greta girl, don't you be doing it, too. Hold still or Papa spank. My, my, but you two-leggers can whirl about when you have a mind to."

My stampede had carried his featherweight body a couple of yards, but it stopped me and I got my mind back, partly.

"Unhand it, I say!" Sid repeated without accomplishing anything, and he released Beau, though he kept a hand near the gambler's shoulder.

Then my fat friend from Lynn Regis looked real distraught at the Void and blustered at no one in particular, " 'Sdeath, think you I'd mutiny against my masters, desert the Spiders, go to ground like a spent fox and pull my hole in after me? A plague of such cowardice! Who suggests it? Introversion's no mere last-ditch device. Unless ordered, supervised and sanctioned, it means the end. And what if I'd Introverted 'ere we got Kaby's call for succor, hey?"

HIS warrior maid nodded with harsh approval and he noticed it and shook his free hand at her and scolded her, "Not that I say yea to your mad plan for that Devil's casket, you half-clad lackwit. And yet to jettison . . . Oh, ye gods, ye gods—" he wiped his hand across his face—"grant me a minute in which I may think!"

Thinking time wasn't an item even on the strictly limited list at the moment, although Sevensee, squatting dourly on his hairy haunches where Maud had left him, threw in a dead-pan "Thas tellin em, Gov."

Then Doc at the bar stood up tall as Abe Lincoln in his top hat and shawl and 19th Century duds and raised an unwavering arm for silence and said something that sounded like: "Introversh, inversh, glovsh," and then his enunciation switched to better than perfect as he continued, "I know to an absolute certainty what we must do."

It showed me how rabbity we were that the Place got quiet as a church while we all stopped whatever we were doing and waited breathless for a poor drunk to tell us how to save ourselves.

He said something like, "Inversh . . . bosh . . . " and held our eyes for a moment longer. Then

the light went out of his and he slobbered out a *"Nichevo"* and slid an arm far along the bar for a bottle and started to pour it down his throat without stopping sliding.

Before he completed his collapse to the floor, in the split second while our attention was still focused on the bar, Bruce vaulted up on top of it, so fast it was almost like he'd popped up from nowhere, though I'd seen him start from behind the piano.

"I've a question. Has anyone here triggered that bomb?" he said in a voice that was very clear and just loud enough. "So it can't go off," he went on after just the right pause, his easy grin and brisk manner putting more heart into me all the time. "What's more, if it were to be triggered, we'd still have half an hour. I believe you said it had that long a fuse?"

He stabbed a finger at Kaby. She nodded.

"Right," he said. "It'd have to be that long for whoever plants it in the Parthian camp to get away. There's another safety margin.

"Second question. Is there a locksmith in the house?"

FOR all Bruce's easiness, he was watching us like a golden eagle and he caught Beau's and Maud's affirmatives before they had a chance to explain or hedge them and said, "That's very good. Under certain circumstances, you two'd be the ones to go to work on the chest. But before we consider that, there's Question Three: Is anyone here an atomics technician?"

That one took a little conversation to straighten out, Illy having to explain that, yes, the Early Lunans had atomic power — hadn't they blasted the life off their planet with it and made all those ghastly craters?—but no, he wasn't a technician exactly, he was a "thinger" (I thought at first his squeakbox was lisping); what was a thinger? —well, a thinger was someone who manipulated things in a way that was truly impossible to describe, but no, you couldn't possibly thing atomics; the idea was quite ridiculous, so he couldn't be an atomics thinger; the term was worse than a contradiction, well, really!—while Sevensee, from his two-thousand-millennia advantage of the Lunan, grunted to the effect that his culture didn't rightly use any kind of power, but just sort of moved satyrs and stuff by wrastling space-time around, "or think em roun ef we hafta. Can't think em in the Void, tho, wus luck. Hafta have— I dunno wut. Dun havvit anyhow."

"So we don't have an A-tech," Bruce summed up, "which makes it worse than useless, downright dangerous, to tamper with the chest. We wouldn't know what to do if we did get inside safely. One more question." He directed it toward

Sid. "How long before we can jettison anything?"

Sid, looking a shade jealous, yet mostly grateful for the way Bruce had calmed his chickens, started to explain, but Bruce didn't seem to be taking any chance of losing his audience, and as soon as Sid got to the word "rhythm," he pulled the answer away from him.

"In brief, not until we can effectively tune in on the cosmos again. Thank you, Master Lessingham. That's at least five hours—two mealtimes, as the Cretan officer put it," and he threw Kaby a quick soldierly smile. "So, whether the bomb goes to Egypt or elsewhere, there's not a thing we can do about it for five hours. All right then!"

His smile blinked out like a light and he took a couple of steps up and down the bar, as if measuring the space he had. Two or three cocktail glasses sailed off and popped, but he didn't seem to notice them and we hardly did either. It was creepy the way he kept staring from one to another of us. We had to look up. Behind his face, with the straight golden hair flirting around it, was only the Void.

"All right then," he repeated suddenly. "We're twelve Spiders and two Ghosts, and we've time for a bit of a talk, and we're all in the same bloody boat, fighting the same bloody war, so we'll all know what we're talking about. I raised the subject a while back, but I was steamed up about a glove, and it was a big jest. All right! But now the gloves are off!"

BRUCE ripped them out of his belt where they'd been tucked and slammed them down on the bar, to be kicked off the next time he paced back and forth, and it wasn't funny.

"Because," he went right on, "I've been getting a completely new picture of what this Spiders' war has been doing to each one of us. Oh, it's jolly good sport to slam around in space and time and then have a rugged little party outside both of them when the operation's over. It's sweet to know there's no cranny of reality so narrow, no privacy so intimate or sacred, no wall of was or will be strong enough, that we can't shoulder in. Knowledge is a glamorous thing, sweeter than lust or gluttony or the passion of fighting and including all three, the ultimate insatiable hunger, and it's great to be Faust, even in a pack of other Fausts.

"It's sweet to jigger reality, to twist the whole course of a man's life or a culture's, to ink out his or its past and scribble in a new one, and be the only one to know and gloat over the changes—hah! killing men or carrying off women isn't in it for glutting the sense of

power. It's sweet to feel the Change Winds blowing through you and know the pasts that were and the past that is and the pasts that may be. It's sweet to wield the Atropos and cut a Zombie or Unborn out of his lifeline and look the Doubleganger in the face and see the Resurrection-glow in it and Recruit a brother, welcome a newborn fellow Demon into our ranks and decide whether he'll best fit as Soldier, Entertainer, or what.

"Or he can't stand Resurrection, it fries or freezes him, and you've got to decide whether to return him to his lifeline and his Zombie dreams, only they'll be a little grayer and horrider than they were before, or whether, if she's got that tantalizing something, to bring her shell along for a Ghostgirl—that's sweet, too. It's even sweet to have Change Death poised over your neck, to know that the past isn't the precious indestructible thing you've been taught it was, to know that there's no certainty about the future either, whether there'll even be one, to know that no part of reality is holy, that the cosmos itself may wink out like a flicked switch and God be not and nothing left but nothing!"

He threw out his arms against the Void. "And knowing all that, it's doubly sweet to come through the Door into the Place and be out of the worst of the Change Winds and enjoy a well-earned Recuperation and share the memories of all these sweetnesses I've been talking about, and work out all the fascinating feelings you've been accumulating back in the cosmos, layer by black layer, in the company of and with the help of the best bloody little band of fellow Fausts and Faustines going!

"Oh, it's a sweet life, all right, but I'm asking you—" and here his eyes stabbed us again, one by one, fast —"I'm asking you what it's done to us. I've been getting a completely new picture, as I said, of what my life was and what it could have been if there'd been changes of the sort that even we Demons can't make, and what my life is. I've been watching how we've all been responding to things just now, to the news of Saint Petersburg and to what the Cretan officer told beautifully—only it wasn't beautiful what she had to tell—and mostly to that bloody box of bomb. And I'm simply asking each one of you, what's happened to you?"

HE stopped his pacing and stuck his thumbs in his belt and seemed to be listening to the wheels turning in at least eleven other heads—only I stopped mine pretty quick, with Dave and Father and the Rape of Chicago coming up out of the dark on the turn and Mother and the Indiana Dunes and Jazz Limited just behind them, followed by the un-

thinkable thing the Spider doctor had flicked into existence when I flopped as a nurse, because I can't stand that to be done to my mind by anybody but myself.

I stopped them by using the old infallible Entertainers' gimmick, a fast survey of the most interesting topic there is — other people's troubles.

OFFHAND, Beau looked as if he had most troubles, shamed by his boss and his girl given her heart to a Soldier; he was hugging them to himself very quiet.

I didn't stop for the two ETs—they're too hard to figure—or for Doc; nobody can tell whether a fallen-down drunk's at the black or bright end of his cycle; you just know it's cycling.

Maud ought to be suffering as much as Beau, called names and caught out in a panic, which always hurts her because she's plus three hundred years more future than the rest of us and figures she ought to be that much wiser, which she isn't always—not to mention she's over fifty years old, though her home-century cosmetic science keeps her looking and acting teenage most of the time. She'd backed away from the bronze chest so as not to stand out, and now Lili came from behind the piano and stood beside her.

Lili had the opposite of troubles, a great big glow for Bruce, proud as a promised princess watching her betrothed. Erich frowned when he saw her, for he seemed proud too, proud of the way his *Kamerad* had taken command of us panicky whacks *Fuhrer*-fashion. Sid still looked mostly grateful and inclined to let Bruce keep on talking.

Even Kaby and Mark, those two dragons hot for battle, standing a little in front and to one side of us by the bronze chest, like its guardians, seemed willing to listen. They made me realize one reason Sid had for letting Bruce run on, although the path his talk was leading us down was flashing with danger signals: When it was over, there'd still be the problem of what to do with the bomb, and a real opposition shaping up between Soldiers and Entertainers, and Sid was hoping a solution would turn up in the meantime or at least was willing to put off the evil day.

But beyond all that, and like the rest of us, I could tell from the way Sid was squinting his browy eyes and chewing his beardy lip that he was shaken and moved by what Bruce had said. This New Boy had dipped into our hearts and counted our kicks so beautifully, better than most of us could have done, and then somehow turned them around so that we had to think of what messes and heels and black sheep and lost lambs we were — well, we wanted to keep on listening.

CHAPTER 8

Give me a place to stand,
and I will move the world.
—Archimedes

A PLACE TO STAND

BRUCE'S voice had a faraway touch and he was looking up left at the Void as he said, "Have you ever really wondered why the two sides of this war are called the Snakes and the Spiders? Snakes may be clear enough—you always call the enemy something dirty. But Spiders—our name for ourselves? Bear with me, Ilhilihis; I know that no being is created dirty or malignant by Nature, but this is a matter of anthropoid feelings and folkways. Yes, Mark, I know that some of your legions have nicknames like the Drunken Lions and the Snails, and that's about as insulting as calling the British Expeditionary Force the Old Contemptibles.

"No, you'd have to go to bands of vicious youths in cities slated for ruin to find a habit of naming like ours, and even they would try to brighten up the black a bit. But simply—Spiders. And Snakes, for that's their name for themselves too, you know. Spiders and Snakes. What are our masters, that we give them names like that?"

It gave me the shivers and set my mind working in a dozen directions and I couldn't stop it, although it made the shivers worse. Illy beside me now—I'd never given it a thought before, but he did have eight legs of a sort, and I remembered thinking of him as a spider monkey, and hadn't the Lunans had wisdom and atomic power and a billion years in which to get the Change War rolling?

Or suppose, in the far future, Terra's own spiders evolved intelligence and a cruel cannibal culture. They'd be able to keep their existence secret. I had no idea of who or what would be on Earth in Sevensee's day, and wouldn't it be perfect black hairy poisoned spider-mentality to spin webs secretly through the world of thought and all of space and time?

And Beau — wasn't there something real Snaky about him, the way he moved and all?

Spiders and Snakes. *Spinne und Schlange,* as Erich called them. S & S. But SS stood for the Nazi *Schutzstaffel,* the Black Shirts, and what if some of those cruel, crazy Jerries had discovered time travel and — I brought myself up with a jerk and asked myself, "Greta, how nuts can you get?"

FROM where he was on the floor, the front of the bar his sounding board, Doc shrieked up at Bruce like one of the damned from the pit, "Don't speak against the Spiders! Don't blaspheme! They can hear the Unborn whisper. Others whip only the skin, but

they whip the naked brain and heart," and Erich called out, "That's enough, Bruce!"

But Bruce didn't spare him a look and said, "But whatever the Spiders are and no matter how much whip they use, it's plain as the telltale on the Maintainer that the Change War is not only going against them, but getting away from them. Dwell for a bit on the current flurry of stupid slugging and panicky anachronism, when we all know that anachronism is what gets the Change Winds out of control. This punchdrunk pounding on the Cretan-Dorian fracas as if it were the only battle going and the only way to work things. Whisking Constantine from Britain to the Bosporus by rocket, sending a pocket submarine back to sail with the Armada against Drake's woodensides — I'll wager you hadn't heard those! And now, to save Rome, an atomic bomb.

"Ye gods, they could have used Greek fire or even dynamite, but a fission weapon . . . I leave you to imagine what gaps and scars that will make in what's left of history — the smothering of Greece and the vanishment of Provence and the troubadours and the Papacy's Irish Captivity won't be in it!"

The cut on his cheek had opened again and was oozing a little, but he didn't pay any attention to it, and neither did we, as his lips thinned in irony and he said, "But I'm forgetting that this is a cosmic war and that the Spiders are conducting operations on billions, trillions of planets and inhabited gas clouds through millions of ages and that we're just one little world—one little solar system, Sevensee—and we can hardly expect our inscrutable masters, with all their pressing preoccupations and far-flung responsibilities, to be especially understanding or tender in their treatment of our pet books and centuries, our favorite prophets and periods, or unduly concerned about preserving any of the trifles that we just happen to hold dear.

"Perhaps there are some sentimentalists who would rather die forever than go on living in a world without the *Summa*, the Field Equations, *Process and Reality*, *Hamlet*, Matthew, Keats, and the *Odyssey*, but our masters are practical creatures, ministering to the needs of those rugged souls who want to go on living no matter what."

ERICH'S "Bruce, I'm telling you that's enough," was lost in the quickening flow of the New Boy's words. "I won't spend much time on the minor signs of our major crack-up—the canceling of leaves, the sharper shortages, the loss of the Express Room, the use of Recuperation Stations for ops and all the other frantic patchwork

—last operation but one, we were saddled with three Soldiers from outside the Galaxy and, no fault of theirs, they were no earthly use. Such little things might happen at a bad spot in any war and are perhaps only local. But there's a big thing."

He paused again, to let us wonder, I guess. Maud must have worked her way over to me, for I felt her dry little hand on my arm and she whispered out of the side of her mouth, "What do we do now?"

"We listen," I told her the same way. I felt a little impatient with her need to be doing something about things.

She cocked a gold-dusted eyebrow at me and murmured, "You, too?"

I didn't get to ask her me, too, what? Crush on Bruce? Nuts!—because just then Bruce's voice took up again in the faraway range.

"Have you ever asked yourselves how many operations the fabric of history can stand before it's all stitches, whether too much Change won't one day wear out the past? And the present and the future, too, the whole bleeding business. Is the law of the Conservation of Reality any more than a thin hope given a long name, a prayer of theoreticians? Change Death is as certain as Heat Death, and far faster. Every operation leaves reality a bit cruder, a bit uglier, a bit more makeshift, and a whole lot less rich in those details and feelings that are our heritage, like the crude penciled sketch on canvas when you've stripped off the paint.

"If that goes on, won't the cosmos collapse into an outline of itself, then nothing? How much thinning can reality stand, having more and more Doublegangers cut out of it? And there's another thing about every operation — it wakes up the Zombies a little more, and as its Change Winds die, it leaves them a little more disturbed and nightmare-ridden and frazzled. Those of you who have been on operations in heavily worked-over temporal areas will know what I mean—that look they give you out of the sides of their eyes as if to say, 'You again? For Christ's sake, go away. We're the dead. We're the ones who don't want to wake up, who don't want to be Demons and hate to be Ghosts. Stop torturing us.'"

I LOOKED around at the Ghost-girls; I couldn't help it. They'd somehow got together on the control divan, facing us, their backs to the Maintainers. The Countess had dragged along the bottle of wine Erich had fetched her earlier and they were passing it back and forth. The Countess had a big rose splotch across the ruffled white lace of her blouse.

Bruce said, "There'll come a day when all the Zombies and all the Unborn wake up and go crazy together and figuratively come marching at us in their numberless hordes, saying, 'We've had enough.'"

But I didn't turn back to Bruce right away. Phryne's chiton had slipped off one shoulder and she and the Countess were sitting sagged forward, elbows on knees, legs spread—at least, as far as the Countess's hobble skirt would let her—and swayed toward each other a little. They were still surprisingly solid, although they hadn't had any personal attention for a half hour, and they were looking up over my head with half-shut eyes and they seemed, so help me, to be listening to what Bruce was saying and maybe hearing some of it.

"We make a careful distinction between Zombies and Unborn, between those troubled by our operations whose lifelines lie in the past and those whose lifelines lie in the future. But is there any distinction any longer? Can we tell the difference between the past and the future? Can we any longer locate the now, the real now of the cosmos? The Places have their own nows, the now of the Big Time we're on, but that's different and it's not made for real living.

"The Spiders tell us that the real now is somewhere in the last half of the 20th Century, which means that several of us here are also alive in the cosmos, have lifelines along which the now is traveling. But do you swallow that story quite so easily, Ilhilihis, Sevensee? How does it strike the servants of the Triple Goddess? The Spiders of Octavian Rome? The Demons of Good Queen Bess? The gentlemen Zombies of the Greater South? Do the Unborn man the starships, Maud?

"The Spiders also tell us that, although the fog of battle makes the now hard to pin down precisely, it will return with the unconditional surrender of the Snakes and the establishment of cosmic peace, and roll on as majestically toward the future as before, quickening the continuum with its passage. Do you really believe that? Or do you believe, as I do, that we've used up all the future as well as the past, wasted it in premature experience, and that we've had the real now smudged out of existence, stolen from us forever, the precious now of true growth, the child-moment in which all life lies, the moment like a newborn baby that is the only home for hope there is?"

HE let that start to sink in, then took a couple of quick steps and went on, his voice rising over Erich's "Bruce, for the last time—" and seeming to pick up a

note of hope from the very word he had used, "But although things look terrifyingly black, there remains a chance — the slimmest chance, but still a chance — of saving the cosmos from Change Death and restoring reality's richness and giving the Ghosts good sleep and perhaps even regaining the real now. We have the means right at hand. What if the power of time traveling were used not for war and destruction, but for healing, for the mutual enrichment of the ages, for quiet communication and growth, in brief, to bring a peace message—"

But my little commandant is quite an actor himself and knows a wee bit about the principles of scene-stealing, and he was not going to let Bruce drown him out as if he were just another extra playing a Voice from the Mob. He darted across our front, between us and the bar, took a running leap, and landed bang on the bloody box of bomb.

A bit later, Maud was silently showing me the white ring above her elbow where I'd grabbed her and Illy was teasing a clutch of his tentacles out of my other hand and squeaking reproachfully, "Greta girl, don't ever do that."

Erich was standing on the chest and I noticed that his boots carefully straddled the circle of skulls, and I should have known anyway you could hardly push them in the right order by jumping on them, and he was pointing at Bruce and saying, "— and that means mutiny, my young sir. *Um Gottes willen*, Bruce, listen to me and step down before you say anything worse. I'm older than you, Bruce. Mark's older. Trust in your *Kameraden*. Guide yourself by their knowledge."

He had got my attention, but I had much rather have him black my eye.

"You older than me?" Bruce was grinning. "When your twelve-years' advantage was spent in soaking up the wisdom of a race of sadistic dreamers gone paranoid, in a world whose thought-stream had already been muddied by one total war? Mark older than me? When all his ideas and loyalties are those of a wolf pack of unimaginative sluggers two thousand years younger than I am? Either of you older because you have more of the killing cynicism that is all the wisdom the Change World ever gives you? Don't make me laugh!

"I'm an Englishman, and I come from an epoch when total war was still a desecration and the flowers and buds of thoughts not yet whacked off or blighted. I'm a poet and poets are wiser than anyone because they're the only people who have the guts to think and feel at the same time. Right, Sid? When I talk to all of you about a

peace message, I want you to think about it concretely in terms of using the Places to bring help across the mountains of time when help is really needed, not to bring help that's undeserved or knowledge that's premature or contaminating, sometimes not to bring anything at all, but just to check with infinite tenderness and concern that everything's safe and the glories of the universe unfolding as they were intended to—"

"Yes, you are a poet, Bruce," Erich broke in. "You can tootle soulfully on the flute and make us drip tears. You can let out the stops on the big organ pipes and make us tremble as if at Jehovah's footsteps. For the last twenty minutes, you have been giving us some very *charmante* poetry. But what are you? An Entertainer? Or are you a Soldier?"

RIGHT then — I don't know what it was, maybe Sid clearing his throat — I could sense our feelings beginning to turn against Bruce. I got the strangest feeling of reality clamping down and bright colors going dull and dreams vanishing. Yet it was only then I also realized how much Bruce had moved us, maybe some of us to the verge of mutiny, even. I was mad at Erich for what he was doing, but I couldn't help admiring his cockiness.

I was still under the spell of Bruce's words and the more-than-words behind them, but then Erich would shift around a bit and one of his heels would kick near the death's-head pushbuttons and I wanted to stamp with spike heels on every death's-head button on his uniform. I didn't know exactly what I felt yet.

"Yes, I'm a Soldier," Bruce told him, "and I hope you won't ever have to worry about my courage, because it's going to take more courage than any operation we've ever planned, ever dreamed of, to carry the peace message to the other Places and to the wound-spots of the cosmos. Perhaps it will be a fast wicket and we'll be bowled down before we score a single run, but who cares? We may at least see our real masters when they come to smash us, and for me that will be a deep satisfaction. And we may do some smashing of our own."

"So you're a Soldier," Erich said, his smile showing his teeth. "Bruce, I'll admit that the half-dozen operations you've been on were rougher than anything I drew in my first hundred sleeps. For that, I am all honest sympathy. But that you should let them get you into such a state that love and a girl can turn you upside down and start you babbling about peace messages — "

"Yes, by God, love and a girl have changed me!" Bruce shouted

at him, and I looked around at Lili and I remembered Dave saying, "I'm going to Spain," and I wondered if anything would ever again make my face flame like that. "Or, rather, they've made me stand up for what I've believed in all along. They've made me — "

"Wunderbar," Erich called and began to do a little sissy dance on the bomb that set my teeth on edge. He bent his wrists and elbows at arty angles and stuck out a hip and ducked his head simperingly and blinked his eyes very fast. "Will you invite me to the wedding, Bruce? You'll have to get another best man, but I will be the flower girl and throw pretty little posies to all the distinguished guests. Here, Mark. Catch, Kaby. One for you, Greta. *Danke schön. Ach, zwei Herzen in dreivierteltakt . . . ta-ta . . . ta-ta . . . ta-ta-ta-ta-ta . . .* "

"What the hell do you think a woman is?" Bruce raged. "Something to mess around with in your spare time?"

ERICH kept on humming "Two Hearts in Waltz Time" — and jigging around to it, damn him — but he slipped in a nod to Bruce and a "Precisely." So I knew where I stood, but it was no news to me.

"Very well," Bruce said, "let's leave this Brown Shirt *maricón* to amuse himself and get down to business. I made all of you a proposal and I don't have to tell you how serious it is or how serious Lili and I are about it. We not only must infiltrate and subvert other Places, which luckily for us are made for infiltration, we also must make contact with the Snakes and establish working relationships with their Demons at our level as one of our first steps."

That stopped Erich's jig and got enough of a gasp from some of us to make it seem to come from practically everybody. Erich used it to work a change of pace.

"Bruce! We've let you carry this foolery further than we should. You seem to have the idea that because anything goes in the Place — dueling, drunkenness, *und so weiter* — you can say what you have and it will all be forgotten with the hangover. Not so. It is true that among such a set of monsters and free spirits as ourselves, and working as secret agents to boot, there cannot be the obvious military discipline that would obtain in a Terran army.

"But let me tell you, Bruce, let me grind it home into you — Sid and Kaby and Mark will bear me out in this, as officers of equivalent rank — that the Spider line of command stretches into and through this Place just as surely as the word of *der Führer* rules Chicago. And as I shouldn't have to emphasize to you, Bruce, the

Spiders have punishments that would make my countrymen in Belsen and Buchenwald — well, pale a little. So while there is still a shadow of justification for our interpreting your remarks as utterly tasteless clowning — "

"Babble on," Bruce said, giving him a loose downward wave of his hand without looking. "I made you people a proposal." He paused. "How do you stand, Sidney Lessingham?"

Then I felt my legs getting weak, because Sid didn't answer right away. The old boy swallowed and started to look around at the rest of us. Then the feeling of reality clamping down got something awful, because he didn't look around, but straightened his back a little. Just then, Mark cut in fast.

"It grieves me, Bruce, but I think you are possessed. Erich, he must be confined."

KABY nodded, almost absently. "Confine or kill the coward, whichever is easier, whip the woman, and let's get on to the Egyptian battle."

"Indeed, yes," Mark said. "I died in it. But now perhaps no longer."

Kaby said to him, "I like you, Roman."

Bruce was smiling, barely, and his eyes were moving and fixing. "You, Ilhilihis?"

Illy's squeak box had never sounded mechanical to me before, but it did as he answered, "I'm a lot deeper into borrowed time than the rest of you, tra-la-la, but Papa still loves living. Include me very much out, Brucie."

"Miss Davies?"

Beside me, Maud said flatly, "Do you think I'm a fool?" Beyond her, I saw Lili and I thought, "My God, I might look as proud if I were in her shoes, but I sure as hell wouldn't look as confident."

Bruce's eyes hadn't quite come to Beau when the gambler spoke up. "I have no cause to like you, sir, rather the opposite. But this Place has come to bore me more than Boston and I have always found it difficult to resist a long shot. A very long one, I fear. I am with you, sir."

There was a pain in my chest and a roaring in my ears and through it I heard Sevensee grunting, " — sicka these lousy Spiders. Deal me in."

And then Doc reared up in front of the bar and he'd lost his hat and his hair was wild and he grabbed an empty fifth by the neck and broke the bottom of it all jagged against the bar and he waved it and screeched, *"Ubivaytye Pauki — i Nyemetzi!"*

And right behind his words, Beau sang out fast the English of it, "Kill the Spiders — and the Germans!"

And Doc didn't collapse then,

though I could see he was hanging onto the bar tight with his other hand, and the Place got stiller, inside and out, than I've ever known it, and Bruce's eyes were finally moving back toward Sid.

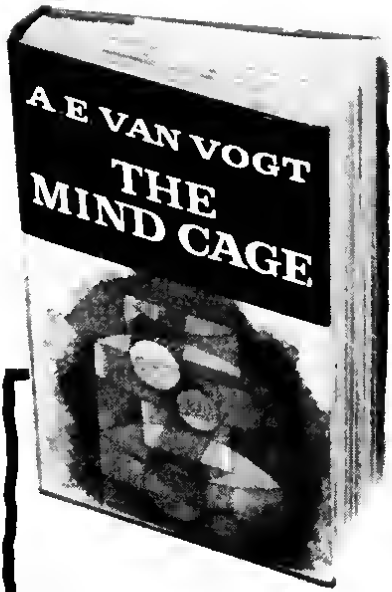
BUT the eyes stopped short of Sid and I heard Bruce say, "Miss Forzane?" and I thought, "That's funny," and I started to look around at the Countess, and felt all the eyes and I realized, "Hey, that's me! But this can't happen to me. To the others, yes, but not to me. I just work here. Not to Greta, no, no, no!"

But it had, and the eyes didn't let go, and the silence and the feeling of reality were Godawful, and I said to myself, "Greta, you've got to say something, if only a suitable four-letter word," and then suddenly I knew what the silence was like. It was like that of a big city if there were some way of shutting off all the noise in one second. It was like Erich's singing when the piano had deserted him. It was as if the Change Winds should ever die completely . . . and I knew beforehand what had happened when I turned my back on them all.

The Ghostgirls were gone. The Major Maintainer hadn't merely been switched to Introvert. It was gone, too.

— FRITZ LEIBER

CONCLUDED NEXT MONTH



Just published:

A. E. VAN VOGT'S brilliant, new science fiction novel

THE MIND CAGE

$3.50 at all bookstores

Simon and Schuster, Publishers

My Fair Planet

By EVELYN E. SMITH

All the world's a stage, so there was room even for this bad actor . . . only he intended to direct it!

AS Paul Lambrequin was clambering up the stairs of his rooming house, he met a man whose face was all wrong. "Good evening," Paul said politely and was about to continue on his way when the man stopped him.

"You are the first person I have encountered in this place who has not shuttered at the sight of me," he said in a toneless voice with an accent that was outside the standard repertoire.

"Am I?" Paul asked, bringing himself back from one of the roseate dreams with which he kept himself insulated from a not-too-kind reality. "I daresay that's because I'm a bit near-sighted." He

Illustrated by DILLON

peered vaguely at the stranger. Then he recoiled.

"What is incorrect about me, then?" the stranger demanded. "Do I not have two eyes, one nose and one mouth, the identical as other people?"

Paul studied the other man. "Yes, but somehow they seem to be put together all wrong. Not that you can help it, of course," he added apologetically, for, when he thought of it, he hated to hurt people's feelings.

"Yes, I can, for, of a truth, 'twas I who put myself together. What did I do amiss?"

Paul looked consideringly at him. "I can't quite put my finger on it, but there are certain subtle nuances you just don't seem to have caught. If you want my professional advice, you'll model yourself directly on some real person until you've got the knack of improvisation."

"Like unto this?" The stranger's outline shimmered and blurred into an amorphous cloud, which then coalesced into the shape of a tall, beautiful young man with the face of an ingenuous demon. "Behold, is that superior?"

"Oh, far superior!" Paul reached up to adjust a stray lock of hair, then realized he was not looking into a mirror. "Trouble is—well, I'd rather you chose someone else to model yourself on. You see, in my profession, it's important to look as unique as possible; helps people remember you. I'm an actor, you know. Currently I happen to be at liberty, but the year before last—"

"Well, whom should I appear like? Should I perhaps pick some fine upstanding figure from your public prints to emulate? Like your President, perhaply?"

"I—hardly think so. It wouldn't do to model yourself on someone well known—or even someone obscure whom you might just happen to run into someday." Being a kind-hearted young man, Paul added, "Come up to my room. I have some British film magazines and there are lots of relatively obscure English actors who are very decent-looking chaps."

So they climbed up to Paul's hot little room under the eaves and, after leafing through several magazines, Paul chose one Ivo Darcy as a likely candidate. Whereupon the stranger deliquesced and reformed into the personable simulacrum of young Mr. Darcy.

"That's quite a trick," Paul observed as it finally got through to him what the other had done. "It would come in handy in the profession—for character parts, you know."

"I fear you would never be able to acquisition it," the stranger said, surveying his new self in the mir-

ror complacently. "It is not a trick but a racial ableness. You see, I feel I can trust you—"

"—Of course I'm not really a character actor; I'm a leading man, but I believe one should be versatile, because there are times when a really good character part comes along—"

"—I am not a human being. I am a native of the fifth planet circulating around the star you call Sirius, and we Sirians have the ableness to change ourselves into the apparition of any other livid form—"

"I thought that might be a near-Eastern accent!" Paul exclaimed, diverted. "Is Lebanese anything like it? Because I understand there's a really juicy part coming up in—"

"I said *Sirian,* not *Syrian;* I do not come from Minor Asia but from outer space, from an otherwhere solar system. I am an outworlder, an extraterrestrial."

"I hope you had a nice trip," Paul said politely. "From Sirius, did you say? What's the state of the theater there?"

"In its infanticide," the stranger told him, "but—"

"Let's face it," Paul muttered bitterly, "it's in its infancy here, too. No over-all planning. No appreciation of the fact that all the components that go to make up a production should be a continuing totality, instead of a tenuous coalition of separate forces which disintegrate—"

"You, I comprehend, are disemployed at current. I should—"

"You won't find that situation in Russia!" Paul went on, pleased to discover a sympathetic audience in this intelligent foreigner. "Mind you," he added quickly, "I disapprove entirely of their politics. In fact, I disapprove of all politics. But when it comes to the theater, in many respects the Russians—"

"—Like to make a proposal to our mutual advanceage—"

"—You wouldn't find an actor there playing a lead role one season and then not be able to get any parts except summer stock and odd bits for the next two years. All right, so the show I had the lead in folded after two weeks, but the critics all raved about my performance. It was the play that stank!"

"Will you terminate the monologue and hearken unto me!" the alien shouted.

PAUL stopped talking. His feelings were hurt. He had thought Ivo liked him; now he saw all the outworlder wanted to do was talk about his own problems.

"I desire to extend to you a position," said Ivo.

"I can't take a regular job," Paul said sulkily. "I have to be available for interviews. Fellow I knew

took a job in a store and, when he was called to read for a part, he couldn't get away. The fellow who did get that part became a big star, and maybe the other fellow could have been a star, too, but now all he is is a lousy chairman of the board of some department store chain—"

"This work can be undergone at your convention between readings and interviews, whenever you have the timing. I shall pay you beautifully, being abundant with U.S.A. currency. I want you to teach me how to act."

"Teach you how to act," Paul repeated, rather intrigued. "Well, I'm not a dramatic coach, you know; however, I do happen to have some ideas on the subject. I feel that most acting teachers nowadays fail to give their students a really thorough grounding in all aspects of the dramatic art. All they talk about is method, method, method. But what about technique?"

"I have observed your species with great diligence and I thought I had acquisitioned your habits and speakings to perfectness. But I fear that, like my initial face, I have got them awry. I want you to teach me to act like a human being, to talk like a human being, to think like a human being."

Paul's attention was really caught. "Well, that *is* a challenge! I don't suppose Stanislavsky ever had to teach an extraterrestrial, or even Strasberg—"

"Then we are in accordance," Ivo said. "You will instruction me?" He essayed a smile.

Paul shuddered. "Very well," he said. "We'll start now. And I think the first thing we'd better start with is lessons in smiling."

Ivo proved to be a quick study. He not only learned to smile, but to frown and to express surprise, pleasure, horror—whatever the occasion demanded. He learned the knack of counterfeiting humanity with such skill that, Paul was moved to remark one afternoon when they were leaving Brooks Brothers after a fitting, "Sometimes you seem even more human than I do, Ivo. I wish you'd watch out for that tendency to rant, though. You're supposed to speak, not make speeches."

"I try not to," Ivo said, "but I keep getting carried away by enthusiasm."

"Apparently I have a real flair for teaching," Paul went on as, expertly camouflaged by Brooks, the two young men melted into the dense charcoal-gray underbrush of Madison Avenue. "I seem to be even more versatile than I thought. Perhaps I have been—well, not wasting but limiting my talents."

"That may be because your talents have not been sufficiently appreciated," his star pupil suggested, "or given enough scope."

IVO was so perceptive! "As a matter of fact," Paul agreed, "it has often seemed to me that if some really gifted individual, equally adept at acting, directing, producing, playwriting, teaching, et al., were to undertake a thorough synthesis of the theater—ah, but that would cost money," he interrupted himself, "and who would underwrite such a project? Certainly not the government of the United States." He gave a bitter laugh.

"Perhaps, under a new regime, conditions might be more favorable for the artist—"

"Shhh!" Paul looked nervously over his shoulder. "There are Senators everywhere. Besides, I never said things were *good* in Russia, just *better*—for the actor, that is. Of course the plays are atrocious propaganda—"

"I was not referring to another human regime. The human being is, at best, save for certain choice spirits, unsympathetic to the arts. We outworlders have a far greater respect for things of the mind."

Paul opened his mouth; Ivo continued without giving him a chance to speak, "No doubt you have often wondered just what I am doing here on Earth?"

The question had never crossed Paul's mind. Feeling vaguely guilty, he murmured, "Some people have funny ideas of where to go for a vacation."

"I am here on business," Ivo told him. "The situation on Sirius is serious."

"You know, that's catchy! 'The situation on Sirius is serious'," Paul repeated, tapping his foot. "I've often thought of trying my hand at a musical com—"

"I mean we have had a ser—grave population problem for the last couple of centuries, hence our government has sent out scouts to look for other planets with similar atmosphere, climate, gravity and so on, where we can ship our excess population. So far, we have found very few."

When Paul's attention was focused, he could be as quick as anybody to put two and two together. "But Earth is already occupied. In fact, when I was in school, I heard something about our having a population problem ourselves."

"The other planets we already —ah—took over were in a similar state," Ivo explained. "We managed to surmount that difficulty."

"How?" Paul asked, though he already suspected the answer.

"Oh, we didn't dispose of *all* of the inhabitants. We merely weeded out the undesirables—who, by fortunate chance, happened to be in the majority—and achieved a happy and peaceful coexistence with the rest."

"But, look," Paul protested. "I mean to say——"

"For instance," Ivo said suavely, "take the vast body of people who watch television and who have never seen a legitimate play in their lives and, indeed, rarely go to the motion pictures. Surely they are expendable."

"Well, yes, of course. But even among them there might be—oh, say, a playwright's mother—"

"One of the first measures our regime would take would be to establish a vast network of community theaters throughout the world. And you, Paul, would receive first choice of starring roles."

"Now wait a minute!" Paul cried hotly. He seldom allowed himself to lose his temper, but when he did . . . he got *angry!* "I pride myself that I've gotten this far wholly on my own merits. I don't believe in using influence to—"

"But, my dear fellow, all I meant was that, with an intelligently coordinated theater and an intellectually adult audience, your abilities would be recognized automatically."

"Oh," said Paul.

HE was not unaware that he was being flattered, but it was so seldom that anyone bothered to pay him any attention when he was not playing a role that it was difficult not to succumb. "Are—are you figuring on taking over the planet single-handed?" he asked curiously.

"Heavens, no! Talented as I am, there are limits. I don't do the—ah—dirty work myself. I just conduct the preliminary investigation to determine how powerful the local defenses are."

"We have hydrogen bombs," Paul said, trying to remember details of a newspaper article he had once read in a producer's anteroom, "and plutonium bombs and—"

"Oh, I know about all those," Ivo smiled expertly. "My job is checking to make sure you don't have anything really dangerous."

All that night, Paul wrestled with his conscience. He knew he shouldn't just let Ivo go on. Yet what else could he do? Go to the proper authorities? But which authorities were the proper ones? And even if he found them, who would believe an actor offstage, delivering such improbable lines? He would either be laughed at or accused of being part of a subversive plot. It might result in a lot of bad publicity which could ruin his career.

So Paul did nothing about Ivo. He went back to the usual rounds of agents' and producers' offices, and the knowledge of why Ivo was on Earth got pushed farther into the back of his mind as he trudged from interview to reading to interview.

It was an exceptionally hot Oc-



tober—the kind of weather when sometimes he almost lost his faith and began to wonder why he was batting his head against a stone wall, why he didn't get a job in a department store somewhere or teaching school. And then he thought of the applause, the curtain calls, the dream of some day seeing his name in lights above the title of the play—and he knew he would never give up. Quitting the theater would be like committing suicide, for off the stage he was alive only technically. He was good; he knew he was good, so some day, he assured himself, he was bound to get his big break.

Toward the end of that month, it came. After the maximum three readings, between which his hopes alternately waxed and waned, he was cast as the male lead in *The Holiday Tree*. The producers were more interested, they said, in getting someone who fitted the role of Eric Everard than in a big name — especially since the female star preferred to have her luster undimmed by competition.

Rehearsals took up so much of his time that he saw very little of Ivo for the next five weeks—but by then Ivo didn't need him any more. Actually, they were no longer teacher and pupil now but companions, drawn together by the fact that they both belonged to different worlds from the one in which they were living. Insofar as he could like anyone who existed outside of his imagination, Paul had grown rather fond of Ivo. And he rather thought Ivo liked him, too—but, because he couldn't ever be quite sure of ordinary people's reactions toward him, how could he be sure of an outworlder's?

Ivo came around to rehearsals sometimes, but naturally it would be boring for him, since he wasn't in the profession, and, after a while, he didn't come around very often. At first, Paul felt a twinge of guilt; then he remembered that he need not worry. Ivo had his own work.

THE whole *Holiday Tree* troupe went out of town for the tryouts, and Paul didn't see Ivo at all for six weeks. Busy, happy weeks they were, for the play was a smash hit from the start. It played to packed houses in New Haven and Boston, and the box office in New York was sold out for months in advance before they even opened.

"Must be kinda fun—acting," Ivo told Paul the morning after the New York opening, as Paul weltered contentedly on his bed—he had the best room in the house now—amid a pile of rave notices. At long last, he had arrived. Everybody loved him. He was a success.

And now that he had read the reviews and they were all favor-

able, he could pay attention to the strange things that had happened to his friend. Raising himself up on an elbow, Paul cried, "Ivo, you're *mumbling!* After all I taught you about articulation!"

"I got t'hanging 'round with this here buncha actors while y'were gone," Ivo said. "They say mumbling's the comin' thing. 'Sides, y'kept yapping that I declaimed, so—"

"But you don't have to go to the opposite extreme and—*Ivo!*" Incredulously, Paul took in the full details of the other's appearance. "What happened to your Brooks Brothers' suits?"

"Hung 'em inna closet," Ivo replied, looking abashed. "I did wear one las' night, though," he went on defensively. "Wooden come dressed like this to y'opening. But all the other fellas wear blue jeans 'n leather jackets. I mean, hell, I gotta conform more'n anybody. Y'know that, Paul."

"And—" Paul sat bolt upright; this was the supreme outrage—"you've changed yourself! You've gotten *younger!*"

"This is an age of yout'," Ivo mumbled. "An' I figured I was 'bout ready for improvisation, like you said."

"Look, Ivo, if you really want to go on the stage——"

"Hell, I don' wanna be no actor!" Ivo protested, far too vehemently. "Y'know damn' well I'm a—a spy, scoutin' 'round t'see if y'have any secret defenses before I make m'report."

"I don't feel I'm giving away any government secrets," Paul said, "when I tell you that the bastions of our defenses are not erected at the Actors' Studio."

"Listen, pal, you lemme spy the way I wanna an' I'll letcha act the way you wanna."

Paul was disturbed by this change in Ivo because, although he had always tried to steer clear of social involvement, he could not help feeling that the young alien had become in a measure his responsibility — particularly now that he was a teen-ager. Paul would even have worried about Ivo, if there hadn't been so many other things to occupy his mind. First of all, the producers of *The Holiday Tree* could not resist the pressure of an adoring public; although the original star sulked, three months after the play had opened in New York, Paul's name went up in lights next to hers, *over the title of the play. He was a star.*

That was good. But then there was Gregory. And that was bad. Gregory was Paul's understudy—a handsome, sullen youth who had, on numerous occasions, been heard to utter words to the effect of: "It's the part that's so good, not him. If I had the chance to play Eric Everard just once, they'd give Lambrequin back to the Indians."

Sometimes he had said the words in Paul's hearing; sometimes the remarks had been lovingly passed on by fellow members of the cast who felt that Paul ought to know.

"I DON'T like that Gregory," Paul told Ivo one Monday evening as they were enjoying a quiet smoke together, for there was no performance that night. "He used to be a juvenile delinquent, got sent to one of those reform schools where they use acting as therapy and it turned out to be his *métier*. But you never know when that kind'll hear the call of the wild again."

"Aaaah, he's a good kid," Ivo said. "He just never had a chanct."

"Trouble is, I'm afraid he's going to *make* himself a chanct—chance, that is."

"Aaaah," retorted Ivo, with prideful inarticulateness.

However, when at six-thirty that Friday, Paul fell over a wire stretched between the jambs of the doorway leading to his private bathroom and broke a leg, even Ivo was forced to admit that this did not look like an accident.

"Ivo," Paul wailed when the doctor had left, "what am I going to do? I refuse to let Gregory go on in my place tonight!"

"Y'gonna hafta," Ivo said, shifting his gum to the other side of his mouth. "He's y'unnastudy."

"But the doctor said it would be weeks before I can get around again. Either Gregory'll take over the part completely with his interpretation and I'll be left out in the cold, or more likely, he'll louse up the play and it'll fold before I'm on my feet."

"Y'gotta have more confidence in y'self, kid. The public ain't gonna forgetcha in a few weeks."

But Paul knew far better than the idealistic Ivo how fickle the public can be. However, he chose an argument that would appeal to the boy. "Don't forget, he booby-trapped me!"

"Cert'ny looks like it," Ivo was forced to concede. "But watcha gonna do? Y'can't prove it. 'Sides, the curtain's gonna gwup in a li'l over a nour—"

Paul gripped Ivo's sinewy wrist. "Ivo, you've got to go on for me!"

"Y'got rocks in y'head or somepin?" Ivo demanded, trying not to look pleased. "I ain't gotta Nequity card, and even if I did, *he's* y'unnastudy."

"No, you don't understand. I don't want you to go on as Ivo Darcy playing Eric Everard. I want you to go on as Paul Lambrequin playing Eric Everard. *You can do it, Ivo!*"

"Good Lord, so I can!" Ivo whispered, temporarily neglecting to mumble. "I'd almost forgotten."

"You know my lines, too. You've cued me in my part often enough."

Ivo rubbed his hand over his forehead. "Yeah, I guess I do."

"Ivo," Paul beseeched him, "I thought we were—pals. I don't want to ask any favors, but I helped you out when you were in trouble. I always figured I could rely on you. I never thought you'd let me down."

"An' I won't." Ivo gripped Paul's hand. "I'll go on t'night 'n play 'at part like it ain't never been played before! I'll—"

"No! No! Play it the way I played it. You're supposed to be *me*, Ivo! Forget Strasberg; go back to Stanislavsky."

"Okay, pal," Ivo said. "Will do."

"And promise me one thing, Ivo. Promise me *you won't mumble*."

Ivo winced. "Okay, but you're the on'y one I'd do 'at for."

Slowly, he began to shimmer. Paul held his breath. Maybe Ivo had forgotten how to transmute himself. But technique triumphed over method. Ivo Darcy gradually coalesced into the semblance of Paul Lambrequin. The show would go on!

"WELL, how was everything?" Paul asked anxiously when Ivo came into his room shortly after midnight.

"Pretty good," Ivo said, sitting down on the edge of the bed. "Gregory was extremely surprised to see me—asked me half a dozen times how I was feeling." Ivo was not only articulating, Paul was gratified to notice; he was enunciating.

"But the show—how did that go? Did anyone suspect you were a ringer?"

"No," Ivo said slowly. "No, I don't think so. I got twelve curtain calls," he added, staring straight ahead of him with a dreamy smile. "Twelve."

"Friday nights, the audience is always enthusiastic." Then Paul swallowed hard and said, "Besides, I'm sure you were great in the role."

But Ivo didn't seem to hear him. Ivo was still wrapped in his golden daze. "Just before the curtain went up, I didn't think I was going to be able to do it. I began to feel all quivery inside, the way I do before I—I change."

"Butterflies in the stomach is the professional term." Paul nodded wisely. "A really good actor gets them before every performance. No matter how many times I play a role, there's that minute when the house lights start to dim when I'm in an absolute panic—"

"—And then the curtain went up and I was all right. I was fine. I was Paul Lambrequin. I was Eric Everard. I was—everything."

"Ivo," Paul said, clapping him on the shoulder, "you're a born trouper."

"Yes," Ivo murmured, "I'm be-

ginning to think so myself."

For the next four weeks, Paul Lambrequin lurked in his room while Ivo Darcy played Paul Lambrequin playing Eric Everard.

"It's terrific of you to take all this time away from your duties, old chap," Paul said to Ivo one day between the matinee and the evening performances. "I really do appreciate it. Although I suppose you've managed to squeeze some of them in. I never see you on non-matinee afternoons."

"Duties?" Ivo repeated vacantly. "Yes, of course—my duties."

"Let me give you some professional advice, though. Be more careful when you take off your makeup. There's still some grease paint in the roots of your hair."

"Sloppy of me," Ivo agreed, getting to work with a towel.

"I can't understand why you bother to put on the stuff at all," Paul grinned, "when all you need to do is just change a little more."

"I know." Ivo rubbed his temples vigorously. "I suppose I just like the—smell of the stuff."

"Ivo," Paul laughed, "there's no use trying to kid me; you are stagestruck. I'm sure I have enough pull now to get you a bit part somewhere, when I'm up and around again, and then you can get yourself an Equity card. Maybe," he added amusedly, "I can even have you replace Gregory as my understudy."

LATER, in retrospect, Paul thought perhaps there had been a curious expression in Ivo's eyes, but right then he'd had no inkling that anything untoward was up. He did not find out what had been at the back of Ivo's mind until the Sunday before the Tuesday on which he was planning to resume his role.

"Lord, it's going to be good to feel that stage under my feet again," he said as he went through a series of complicated limbering-up exercises of his own devisement, which he had sometimes thought of publishing as *The Lambrequin Time and Motion Studies.* It seemed unfair to keep them from other actors.

Ivo turned around from the mirror in which he had been contemplating their mutual beauty, "Paul," he said quietly, "you're never going to feel that stage under your feet again."

Paul sat on the floor and stared at him.

"You see, Paul," Ivo said, "I am Paul Lambrequin now. I am more Paul Lambrequin than I was — whoever I was on my native planet. I am more Paul Lambrequin than *you* ever were. You learned the part superficially, Paul, but I really *feel* it."

"It's not a part," Paul said querulously. "It's me. I've always been Paul Lambrequin."

"How can you be sure of that?

You've had so many identities, why should this be the true one? No, you only *think* you're Paul Lambrequin. I *know* I am."

"Dammit," Paul said, "that's the identity in which I've taken out Equity membership. And be reasonable, Ivo — there can't be two Paul Lambrequins."

Ivo smiled sadly. "No, Paul, you're right. There can't."

Of course Paul had known all along that Ivo was not a human being. It was only now, however, that full realization came to him of what a ruthless alien monster the other was, existing only to gratify his own purposes, unaware that others had a right to exist.

"Are—are you going to—dispose of me, then?" Paul asked faintly.

"To dispose of you, yes, Paul. But not to kill you. My kind has killed enough, conquered enough. We have no real population problem; that was just an excuse we made to salve our own consciences."

"You have consciences, do you?" Paul's face twisted in a sneer that he himself sensed right away was overly melodramatic and utterly unconvincing. Somehow, he could never be really genuine offstage.

Ivo made a sweeping gesture. "Don't be bitter, Paul. Of course we do. All intelligent life-forms do. It's one of the penalties of sentience!"

For a moment, Paul forgot himself. "Watch it, Ivo. You're beginning to ham up your lines."

"We can institute birth control," Ivo went on, his manner subdued. "We can build taller buildings. Oh, there are many ways we can cope with the population increase. That's not the problem. The problem is how to divert our creative energies from destruction to construction. And I think I have solved it."

"How will your people know you have," Paul asked cunningly, "since you say you're not going back?"

"*I* am not going back to Sirius, Paul—*you* are. It is you who are going to teach my people the art of peace to replace the art of war."

PAUL felt himself turn what was probably a very effective white. "But—but I can't even speak the language! I—"

"You will learn the language during the journey. I spent those afternoons I was away making a set of *Sirian-in-a-Jiffy* records for you. Sirian's a beautiful language, Paul, much more expressive than any of your Earth languages. You'll like it."

"I'm sure I shall, but—"

"Paul, you are going to bring my people the outlet for self-expression they have always needed. You see, I lied to you. The theater

on Sirius is not in its infancy; it has never been conceived. If it had been, we would never have become what we are today. Can you imagine——a race like mine, so superbly fitted to practice the dramatic art, remaining in blind ignorance that such an art exists!"

"It does seem a terrible waste," Paul had to agree, although he could not be truly sympathetic just then. "But I am hardly equipped—"

"Who is better equipped than you to meet this mighty challenge? Can't you see that at long last you will be able to achieve your great synthesis of the theatrical arts—as producer, teacher, director, actor, playwright, whatever you will, working with a cast of individuals who can assume any shape or form, who have no preconceived notions of what can be done and what cannot. Oh, Paul, what a glorious opportunity awaits you on Sirius V. How I envy you!"

"Then why don't you do it yourself?" Paul asked.

Ivo smiled sadly again. "Unfortunately, I do not have your manifold abilities. All I can do is act. Superbly, of course, but that's all. I don't have the capacity to build a living theater from scratch. You do. I have talent, Paul, but you have genius."

"It *is* a temptation," Paul admitted. "But to leave my own world . . ."

"Paul, Earth isn't your world. You carry yours along with you wherever you go. Your world exists in the mind and heart, not in reality. In any real situation, you're just as uncomfortable on Earth as you would be on Sirius."

"Yes, but—"

"Think of it this way, Paul. You're not leaving your world. You're just leaving Earth to go on the road. It's a longer road, but look at what's waiting for you at the end of it."

"Yes, look," Paul said, reality very much to the fore in his mind and heart at that moment, "death or vivisection."

"Paul, do you believe I'd do that to you?" There were tears in Ivo's eyes. If he was acting, he was a great performer. *I really am one hell of a good teacher,* Paul thought, *and with lots of raw material like Ivo to work with, I could . . . Could he really mean what he's saying?*

"They won't harm you, Paul, because you will come to Sirius bearing a message from me. You will tell my people that Earth has a powerful defensive weapon and you have come to teach them its secret. And it's true, Paul. The theater is your world's most powerful weapon, its best defense against the universal enemy — reality."

"Ivo," Paul said, "you really must check that tendency toward

bombast. Especially with a purple speech like that; you've simply got to learn to underplay. You'll watch out for that when I'm gone, won't you?"

"I will!" Ivo's face lighted up. "Oh, I will, Paul. I promise never to chew the scenery again. I won't so much as nibble on a prop!"

THE next day, the two of them went up to Bear Mountain where Ivo's ship had been cached all those months. Ivo explained to Paul how the controls worked and showed him where the clean towels were.

Pausing in the airlock, Paul looked back toward Manhattan. "I'd dreamed so many years of seeing my name up in lights on Broadway," he murmured, "and now, just when I made it—"

"I'll keep it up there," Ivo vowed. "I promise. And, meanwhile, you'll be building a new Broadway up there in the stars!"

"Yes," Paul said dreamily, "that is something to look forward to, isn't it?" Fresh, enthusiastic audiences, performers untrammeled by tradition, a cooperative government, unlimited funds—why, there *was* a whole wonderful new world opening up before him.

"—In another ten years or so," Ivo was saying, "Sirian actors will be coming to Earth in droves, making the native performers look sick—"

Paul smiled wisely. "Now, Ivo, you know Equity would never stand for *that*."

"Equity won't be able to help itself. Public pressure will surge upward in a mounting wave and—" Ivo stopped. "Sorry. I was ranting again, wasn't I? It's being out in the open air that does it. I need to be bounded by the four walls of a theater."

"That's a fallacy," Paul began. "On the Greek stage—"

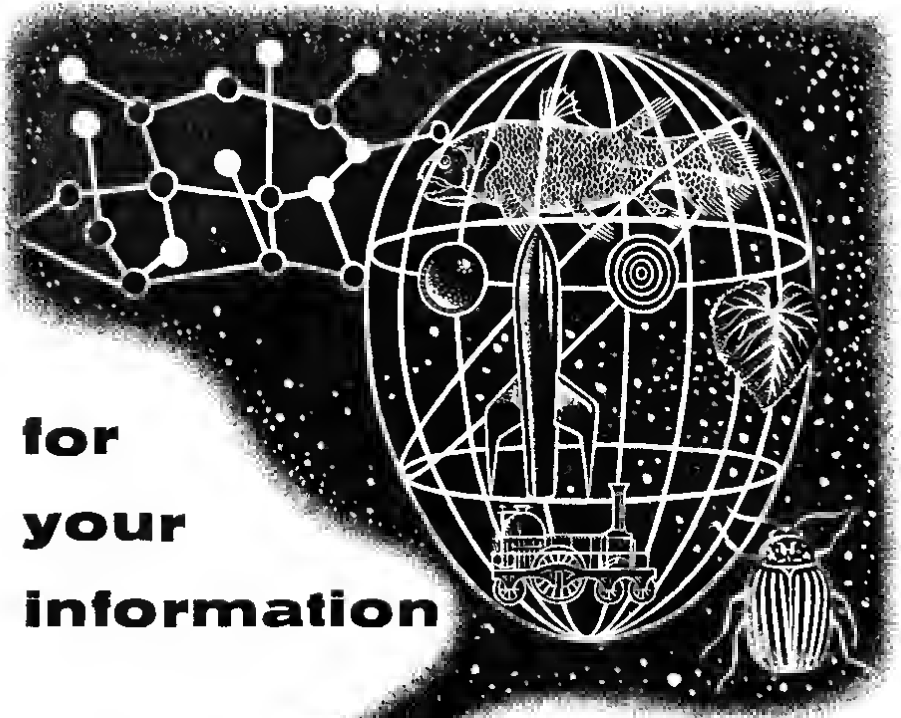
"Save that for the stars, fella," Ivo smiled. "You've got to leave before it gets light." Then he wrung Paul's hand. "Good-by, kid," he said. "You'll knock 'em dead on Sirius."

"Good-by, Ivo." Paul returned the grip. Then he got inside and closed the airlock door behind him. He did hope Ivo would correct that tendency toward declamation; on the other hand, it was certainly better than mumbling.

Paul put a *Sirian-in-a-jiffy* record on the turntable, because he might as well start learning the language right away. Of course he'd have no one to talk to but himself for many months, but then, when all was said and done, he was his own favorite audience. He strapped himself into the acceleration couch and prepared for takeoff.

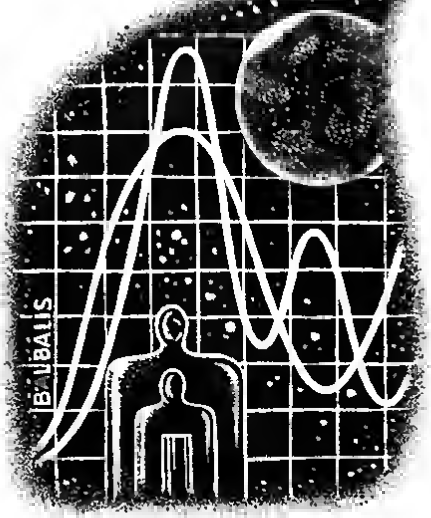
"Next week, *East Lynne*," he said to himself.

— EVELYN E. SMITH



for your information

BY WILLY LEY



THE ORBIT OF THE VANGUARD SATELLITE

THIS, once again, is a "reader's column" in the sense that every item was prompted by letter queries. I have been asked by one reader whether such a column is an annual feature or

whether there is no special schedule to it. There is none; it solely depends on the type of questions I get.

Having cleared up what may be termed a policy matter, I can proceed to the first factual question.

HERE is a question that came from as far away as one can go from New York and still be in the continental United States, meaning southern California. I might say that the question came in triplicate — that is, three different readers wrote about it, all of them quoting a newspaper column.

By now, most people, certainly all science fiction readers, know the principal considerations which went into the planning of the orbit for the Vanguard satellite.

The orbit is to be elliptical, with its nearest point (perigee) about 200 miles above mean sea level and its farthest point (apogee) about 1600 miles from the surface of the Earth. It is expected that the satellite, every time it passes its perigee, encounters a small amount of resistance because there are still some oxygen and nitrogen molecules (or atoms) left at that altitude. The result of this "residual air resistance" is technically known as "orbital decay" (Fig. 1).

The satellite, coming from apogee, will enter the upper atmosphere to pass through its perigee. Residual air resistance causes a small loss of momentum of the satellite and the next apogee, reached 45 minutes later, will therefore be a little bit closer to the Earth's surface. This, in effect, causes a shrinking of the orbit. The focal point of the ellipses will remain the same all the way through, namely the center of the Earth.

The perigee point may come a little closer to the surface of the Earth, but not much. The apogee point will come steadily closer, so that the orbit will assume a more circular shape as time goes on. In the end, it will be a circle, if only momentarily, at the altitude the perigee point then has. The interval from the first apogee to circular orbit is the period of the orbital decay. It is now thought that this may take as long as nine years.

Just to leave no loose ends hanging, I have to add that the circular orbit will then change into a tight spiral along which the satellite will approach the ground, but will not reach it, for aerodynamic heating will vaporize the satellite as soon as it encounters denser layers of the atmosphere.

Now the discussion in California and the letters which I received as a result of it concerned terminology, when you come right down to

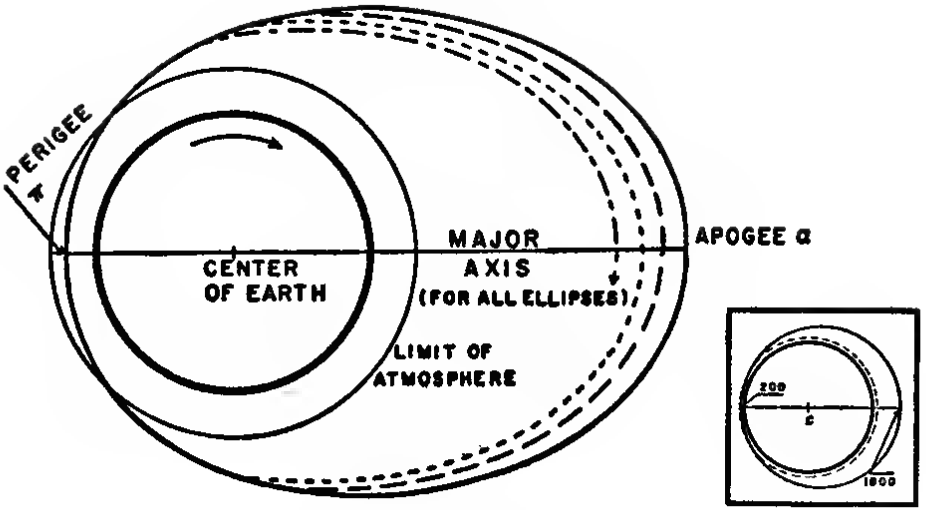


Fig. 1: Diagram of orbital decay of artificial satellite.
(Exaggerated; insert shows proper proportions)

From: *Rockets, Missiles and Space Travel*
(Viking Press, Inc.)

it. Seems that somebody, in explaining this expected performance, had said that the satellite is "slowed down" at perigee by the residual air resistance. Somebody else then complained in injured tones that this was "public misinformation" because the satellite will be speeded up. My readers wanted to know which one of the two was right.

The answer could be "both" or "neither" depending on (A) what you have in mind and (B) how you use the Queen's English. But let us not waste time in trying to decide who meant what and was therefore right or wrong. Let us instead try to understand what really goes on.

The heavy circle in the diagram represents the surface of the Earth; the large, lighter concentric circle represents an altitude of 250 miles. Now let us first imagine that there is such a satellite in space in such an orbit, but that the Earth has no atmosphere. Then the elliptical orbit would be permanent and there would be no orbital decay. But the orbital velocity of a satellite depends on its distance from the Earth's center. If you had one satellite 1600 miles from the sur-

face in a circular orbit and another satellite 200 miles from the surface in a circular orbit, the "200-mile satellite" would have to move faster to stay in its orbit than the "1600-mile satellite." Logically, then, a satellite in an elliptical orbit also has to move faster when it is closer to the surface than it does when farther from the surface.

IT must be pointed out that the satellite which is in such an elliptical orbit will move somewhat faster when going through its 200-mile perigee than would a satellite in a 200-mile circular orbit. This, again, is only logical, for the satellite in the elliptical orbit needs some extra energy to climb out against Earth's gravity to its apogee. Also, when at apogee, it will move somewhat more slowly than a satellite in a 1600-mile circular orbit. If it were fast enough for such an orbit, it would just stay at 1600 miles.

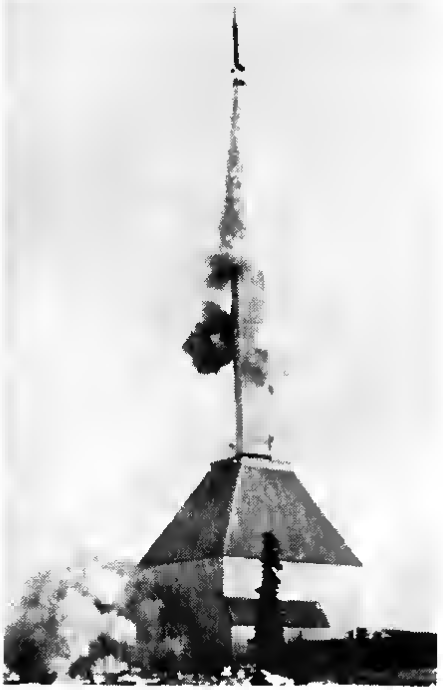


Fig. 2: Aerobee-Hi rocket rising from the "igloo" at Fort Churchill
Courtesy: Aerojet-General Corp.

The important thing to remember of all this is that the satellite is faster at perigee. Therefore, in coming in from apogee, the satellite *does speed up.* At this moment, we restore the atmosphere which we had to leave out for the fundamental explanation. Encountering what air resistance there is 200 miles up, the satellite *does lose some of its speed.*

It does not pass through its perigee point with the same velocity it would have if there were no resistance. So it emerges from the atmosphere somewhat slower than it would if the atmosphere were not there. Going out to apogee again, it slows up more and more because it now climbs against the Earth's gravity. As soon as it has passed apogee, it speeds up again, for it now moves deeper into the Earth's gravitational field.

The main velocity changes, therefore, are not brought about by the residual air resistance at perigee, but are simply inherent in an elliptical orbit.



Fig. 3: Aerobee-Hi rocket being readied for flight. Payload cone is being attached to rocket body

Courtesy: Aerojet-General Corp.

In discussing this, there had been the assumption that we were dealing with the first dozen or so perigee passages. Now we can go on to the time when the orbital decay has progressed to a noticeable extent.

Let's say that the apogee is now only 800 miles from the surface, while the perigee has slipped from 200 miles to 190 miles altitude. This is an orbit which is generally nearer the Earth, in all its parts; hence the satellite has to have a higher orbital velocity in every point of its orbit. You can thus insist on saying that the perigee passages through a tenuous layer of the upper atmosphere have speeded up the satellite. They have, by way of forcing the satellite into a smaller and nearer orbit.

But although the satellite now moves generally faster than at the outset, each perigee passage still causes a small velocity loss. However, this loss is substracted from a larger total. A reasonably correct comparison might be to say



"Rockoon," Deocon rocket being carried by Skyhook balloon. Block box is switchbox
Official U.S. Navy Photograph

that the "withdrawal" due to the perigee passage is smaller than the "accumulated interest." Though there is a small loss during every perigee passage, the orbital velocity is higher. This goes on through the whole orbital decay and even through most of the spiral path.

The real slowdown does not take place until denser layers of the atmosphere are reached. But this slowdown, with its conversion of momentum into heat, also means the end of the satellite.

Rockets in the IGY

ONE of the letters received read, severely condensed, as follows: "Reading the newspapers, one gets the impression as if there will be no other rocket experiments in the International Geophysical Year than U. S. and U.S.S.R. rockets. Only occasionally does one read about other rockets. Could you tell what other rockets are going to be used?"

Sure. Just keep on reading.

When it comes to upper-atmosphere research rockets, there are a few which can be dubbed the work horses. The largest of these work horses is Aerojet's Aerobee-Hi rocket, which also holds the high-altitude record for single-stage rockets with booster. One Aerobee-Hi, fired from the White Sands Proving Grounds, reached an altitude of 193 miles.

The United States opened its participation in the IGY on July 4, 1957, with the firing of an Aerobee-Hi from an "igloo" near Fort Churchill, Manitoba, Canada. The "igloo," of course, was a modern version involving concrete and stainless steel; its more solemn official name is that of an "all-weather rocket launching facility" (Fig. 2). With its doors closed, it is a shelter for fueling and checking rockets in reasonable comfort. For a firing, the doors are opened so that the exhaust blast of the booster can escape into the open.

The Aerobee-Hi rocket (Fig. 3) is about 21 feet in length with a diameter of 15 inches. The volume reserved for scientific instruments is 6 cubic feet; the payload can weigh from 120 to 200 lbs. The fuels are aniline and red fuming nitric acid. For the takeoff, there is a solid-fuel booster 6½ feet in length with a burning time of 2.5 seconds. (The burning time of the rocket is 42 seconds.) At least 40 Aerobee-Hi rockets will be fired during the IGY from various places where there are launching towers available. The northernmost launching tower is the one mentioned near Fort Churchill, which is the northernmost point in continental North America that can be reached by rail.

Another such work horse is the two-stage solid-fuel rocket Nike-Cajun. Its first stage is the booster of the anti-aircraft rocket Nike Ajax, its second stage the 13-foot solid-fuel Cajun rocket. Since the Nike booster has a length of 11 feet, the total length of the Nike-Cajun is 24 feet. The takeoff weight is about 1600 lbs., or about 70 lbs. more than the weight of a fueled Aerobee-Hi without booster.

NIKE-CAJUN, because of its smaller size, is somewhat more flexible in use than the Aerobee-Hi. But the maximum payload weight it can carry is 60 lbs. and with that payload the peak altitude is around 90 miles. At least 65 Nike-Cajun rockets will be fired during the IGY, some from established firing sites like White Sands and Fort Churchill, others from shipboard.

Third of the work horses is the "rockoon," which is the 12-foot solid-fuel Deacon rocket carried to an altitude of 80,000 feet or thereabouts by a plastic "Skyhook" balloon. The reason for this arrangement is that the rocket is launched at a height where more than 80 per cent of the atmosphere is below.

The increase in altitude obtained by this method is nearly incredible. A Deacon rocket fired from the ground on a near-vertical trajectory will attain a peak altitude of about 60,000 feet. If carried to that peak altitude and fired from there, it will rise to 60 miles.

Unfortunately, the balloon needs several hours to rise to 60,000 feet or higher. For this reason, wherever feasible, the balloon is released six or eight hours ahead of the time set for the firing of the rocket. It will climb to its peak altitude and just float there. The rocket is then fired by remote control from the ground or from shipboard.

At least two dozen American rockoons will be used during the IGY, mostly for studies of the so-called solar flares, which are intensely bright spots on the Sun that interfere with radio communication and also release showers of cosmic rays.

The American rockoons (Fig. 4) will be joined by a few dozen British rockoons, which are 18-foot Bristol-University-Fairy rockets, also released from plastic balloons at 60,000 feet or higher and expected to reach 60 miles, like their American counterparts.

If a solar flare puts in an appearance—the Sun was kind enough to supply one for the very opening of the International Geophysical Year—and the scientists feel that a rockoon cannot climb up fast enough to do any good, they may call on the Air Force or on the Navy for a *Rockaire*.

These Rockaires are smaller solid-fuel rockets, about 12 feet in length, which are carried by fast aircraft. The procedure of firing is for the plane to climb to the maximum altitude at which it still handles safely, then loop over, firing the rocket at the instant the plane's fuselage is in a vertical position. The Air Force and Navy Rockaires differ chiefly in the use of different airplanes. The expected maximum height reached by these rockets is around 35 miles.

These are the American IGY rockets.

THE British high-altitude rocket to be used is called the *Skylark*. It was designed by the Royal Aircraft Establishment, stands about 25 feet tall, has a diameter of 17.4 inches and three fixed tail fins. It is a solid-fuel rocket with a slow-burning charge that will need about 30 seconds to be completely consumed. The takeoff weight of the Skylark is 2560 lbs. Test firings carried out in Australia reached peak altitudes of around 93 miles, carrying 65 lbs. of payload. The versatility of the Skylark is unfortunately reduced by the fact that it needs a 180-ft. launching tower.

A Japanese research rocket is also in the running. Its name is *Kappa* and it is a two-stage solid-fuel rocket. The peak altitude expected for the Kappa rocket is around 80 miles. The number to be fired is not established. A Japanese rocket expert I asked told me that the number would depend

on two factors: "availability in the right place at the right time, and opportunity." These are about the same factors which apply to our Rockaires, so that a good tabulation will be possible only after the event.

The Russians, in addition to their own satellite program, are going to fire a large number of high-altitude research rockets from European Russia, from Franz Joseph's Land and from Antarctica.

The rocket to be used is called the *Mateo*, which is simply an abbreviation of Meteorological Rocket. It is a liquid-fuel rocket with solid-fuel booster; its overall length is just about 30 feet and the takeoff weight one metric ton. It needs a launching tower which the Russians have built in the shape of a girder mast surrounded by a spiral staircase.

The fuels for the main rocket are purified kerosene – probably about the same as some of our jet fuels – and nitric acid. The booster is a ring-shaped cluster of six solid-fuel rockets; the open space in the center permits the blast from the liquid-fuel rocket motor to escape. At takeoff, main rocket and the booster cluster are ignited simultaneously.

The solid-fuel booster burns for two seconds and then drops off. The main rocket motor burns for one minute. At an altitude of about 40 miles, the nose cone with the payload is separated from the main body by one or several small solid-fuel rockets which provide a small additional boost for the nose cone. This separation also frees two parachutes, one for the main body of the rocket, the other for the nose cone. The nose cone's parachute just trails behind while the nose cone climbs to 65 miles. Above 40 miles, the air is far too thin to make the parachute effective.

A larger research rocket, with 125 miles peak altitude, has also been announced, but has not been described even in outline. Nor has it been stated how many of the one hundred rocket shots planned by the Russians are to be made with the *Meteo* and how many with the larger rocket.

The Selective Epidemic

THIS letter's from as far away as is possible—barring space travel—namely from a lady in New South Wales, Australia. She wrote:

"I have read two stories lately in which epidemics were the main plot ingredient. In one a disease wipes out all white men and in the other a disease is mentioned to which only white men are immune. Is this possible? It seems to me that species which can interbreed would not be immune to

each other's diseases."

Well, the strange fact is that sometime during the seventeenth century there was a disease which attacked one nationality only. It is known in medical history as the *Sudor anglicus* (English sweat) because its latter stages were characterized by excessive perspiration of a typical and very penetrating odor. It seems to have been inevitably fatal, but it attacked Englishmen only! Though it was indubitably an infection, Danes, Dutchmen, Frenchmen and Germans living among the English escaped unscathed. The disease ran a short and violent course, had, if I remember correctly, one more short flare-up after the main epidemic and has not been heard of since.

Naturally, it is almost impossible to offer an explanation almost three centuries later, but one might suspect that it had something to do with a vitamin deficiency. This deficiency may not have been bad enough by itself to cause noticeable symptoms — moreover, the doctors of that time did not know of deficiency diseases and therefore did not know what to look for — but might have rendered its bearer helpless to some infection.

If this guess is correct, the other nationalities escaped because their dietary habits were different and made them resistant to the infection. Also, provided the guess is correct, it could not repeat, for the first thing any doctor would do nowadays would be to stuff the patient with vitamins. But whatever the explanation, there was a disease attacking one nationality only, in spite of the fact that this nationality is perfectly capable of interbreeding with its neighbors.

A few similar examples from the past are explained: they always involved a contact between populations which had been isolated before. There the case always was that one group had acquired a reasonable degree of other group had not. As a result, immunity to a disease while the the group to which this disease was a novelty was decimated by it.

Again, such cases cannot repeat any more, partly because there are hardly any isolated populations left, partly because modern medicine could do something about it.

Back to Dinosaurs

THE last query I can take care of in this column is a letter which was written in direct reference to my column in the June 1957 issue, entitled "Tribes of the Dinosaurs." You may remember that one of the illustrations (on page 66 of that issue) showed a brontosauruslike dinosaur which has been found in China.

The correspondent admitted

that this picture looked like all the other pictures of such dinosaurs. But, he wanted to know, weren't they all wrong? They are always drawn with legs like those of elephants. Yet the dinosaurs were reptiles. Wasn't it more reasonable to suppose that their legs had been like those of lizards or of crocodiles, bent instead of straight? And this, the correspondent continued, was not just his own idea; he had read somewhere that a scientist had said the same. Why didn't I have this more reasonable concept drawn up? Didn't I know any better, or did my wife refuse to draw it?

As for the last remark, here is proof that she did not refuse (Fig. 5). This is the concept my critic had in mind, with the more usual type of representation for comparison (Fig. 6). Now for the history of this idea.

The first of these dinosaurs (called the sauropods) to be discovered and to be reconstructed was *Brontosaurus excelsus,* found in Wyoming by Prof. Othniel C. Marsh and first described by him in 1879. In 1883, Marsh drew up a preliminary reconstruction which was followed in 1891 by a definitive reconstruction. It showed brontosaurus just as it is still pictured.

Soon after the nearly complete brontosaurus skeleton was found, Prof. Marsh came across remains of another dinosaur of the same general type, but no doubt a different species, more likely a different genus. There was enough to establish detail and the name became *Diplodocus longus.* More remains of diplodocus were found in Wyoming in 1899 and 1900.

It was diplodocus, not brontosaurus, which caused the fight about the position of its legs. It was a discussion teeming with anatomical detail and complicated by the fact that *this* set of tail vertebrae first ascribed to diplodocus turned out to belong to brontosaurus and *that* bone of the pelvic region was not diplodocus, either, but belonged to morosaurus.

Nature had mixed up some of the skeletons rather thoroughly and it took time to disentangle the fossilized mess.

HOWEVER, in 1901 it looked as if there had been two species of diplodocus, namely *Diplodocus longus,* described by Marsh, and *Diplodocus Carnegiei,* described by J. B. Hatcher. (Now everybody is convinced that the two were one and the same, the minor differences being attributable to age or sex differences.)

Andrew Carnegie, after whom the second diplodocus was named, decided to do something. By about 1906, a nearly complete skeleton of *Diplodocus Carnegiei* existed, put together from the remains of several individuals. The few bones



Fig. 5: Diplodocus in position advocated by Tornier
Drawing by Olgo Ley

that had not been actually found, like a few vertebrae and broken-off ends of ribs, could be confidently reconstructed. When the reconstruction was finished, Carnegie had several Plaster of Paris casts of every bone made and presented them to various museums in Europe. One went to the British Museum of Natural History in London, one, I believe, to Brussels, and another one to the Museum of Natural History in Berlin.

The curators and directors wrote grateful letters to Mr. Carnegie and mounted their reproductions just as fast as feasible, following the scheme established by Marsh for brontosaurus. They had just unveiled them when potential disaster appeared in print. In 1908, Oliver Perry Hay published a paper in which an alligatorlike leg position was defended. And one year later, Prof. G. Tornier in Berlin published another paper which said the same.

There were a number of minor disagreements between Hay and Tornier, especially as regards the position of the forefeet, but both said that the legs must have been bent and that the belly must have been dragging on the ground.

The director of the Berlin Museum even placed a large drawing of Tornier's reconstruction in front of the mounted skeleton with the legend: "Mounting of the Diplodocus Skeleton as corrected by G. Tornier" — in the original: *Berichtigte Aufstellung des Diplodocus nach G. Tornier.*

That sign was still there in 1928 even though, in the meantime, several paleontologists had jumped

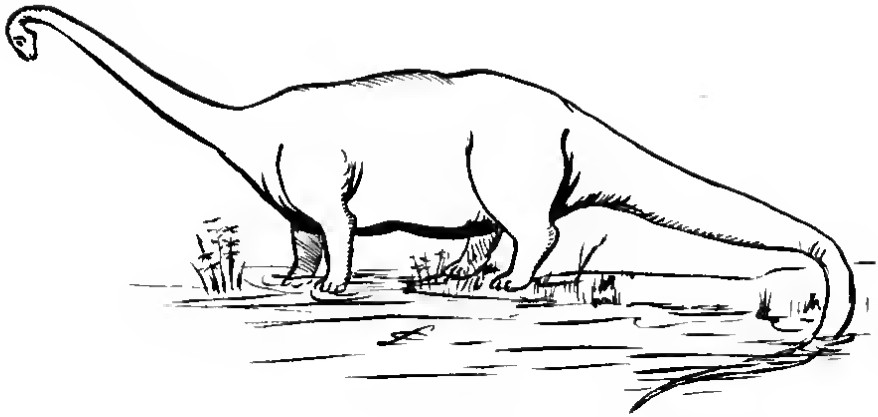


Fig. 6: Diplodocus in correct position

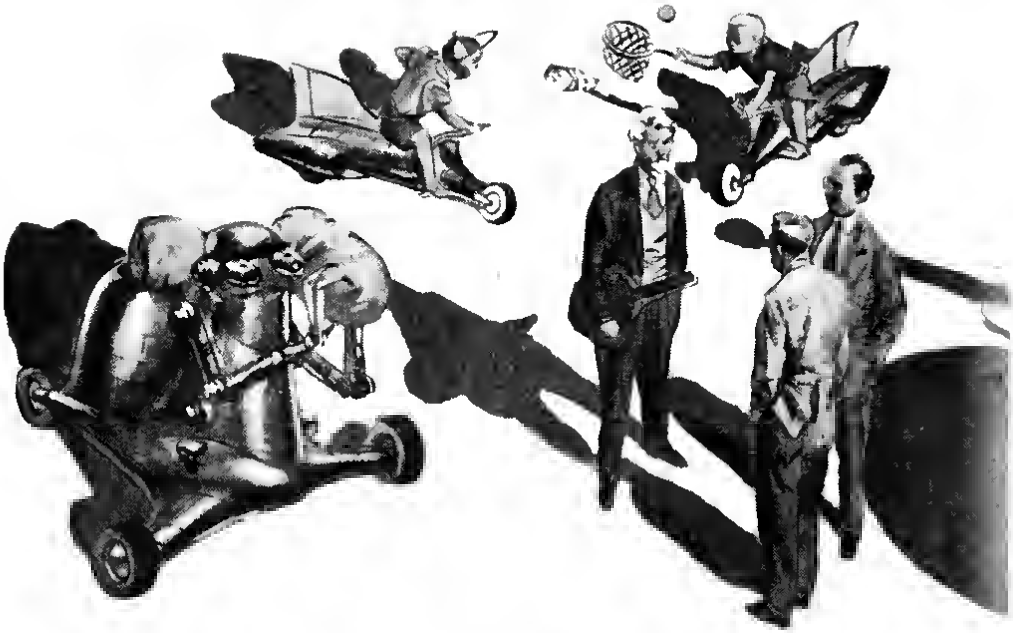
Drawing by Olga Ley

into the breach and proved that Marsh had been perfectly correct. Especially Prof. Othenio Abel of Vienna wrote a rather amusing (though perfectly serious) paper in which he proved that diplodocus, according to the actual measurements of the skeleton, could have moved in that position only if he found a five-foot-deep ditch going in the right direction. Others, like Abel, showed that the joints simply did not permit such a position; they were built for the pillarlike upright leg that had been assumed by most experts all along.

So the alligatorlike position of the sauropod dinosaurs is by no means a new idea, as my correspondent seemed to assume. It was, instead, an early mistake which was thoroughly disproved as long ago as 1910.

— WILLY LEY

LEARN TO PREDICT YOUR FUTURE: Are you helplessly drifting with the tides of life?
You can learn to control your future.
Individual processing Intensives.
Write **REGISTRAR OF SCIENTOLOGY**
Hubbord Guidance Center,
1812 19th Street, N. W. Woshington, D. C.



SPARE THE ROD

The woy the professor sow it, the issue was not think tonk versus memory tonk — but that the robot hod not ever been a young squirt!

Illustrated by WOOD

PROFESSOR Oswald J. Perkins was the last person I wanted to meet that morning, so naturally I walked through the door of the post office and found him standing directly in front of me with his hand extended. I either had to accept the hand or turn around and run, so I shook it, and inquired after his health, and asked him if he thought the hot weather would last, and how his daughter was getting along with her allergy shots, and how the grandson at M.I.T. was making out, and whether the weather forecast had said anything about rain.

In four minutes, I'd exhausted



By LLOYD BIGGLE, JR.

every conversational cliché I could think of and I was beginning to feel embarrassed. At that moment, Postmaster Schantz came to my rescue. He stuck his head through the stamp window and bellowed, "It's a damned dirty shame!"

The professor's thin lips twisted into a faintly ironic smile and his long white hair rippled as he shook his head. "Machines have been putting men out of work ever since men started making machines," he said. "Most of the men find other jobs, and everyone profits because the machines produce more. Do things better, too. Any time a machine can do my job better than I can do it, I'll cheerfully retire. But they haven't built that machine yet, and I don't think they ever will."

WE went into a spontaneous huddle around the stamp window. I looked past the postmaster, and through the rear window of the post office I could see an air-car lifting slowly. Its bright red, white and blue stripes glistened in the early morning sunlight.

Young Bill Wade was at the controls, leaving on his rural delivery route. I made a mental note to ride along with him some day and do a story abouthim. The farmers all admire young Bill. They say he can hit a mail funnel from five hundred feet altitude.

"I just had a talk with Sam Beyers," I said to the professor. "He's taking a full-page ad in Sunday's *Gazette*. He's announcing that his robot now has more than eighty students and that all of them are making six months' progress with every lesson. He told me confidentially that in another week you won't have a student left."

"I know two students he'll have left," the postmaster growled. "I'm not having my grandchildren taking no violin lessons from a robot."

"That's nice of you," Professor Perkins murmured. "But Sam Beyers isn't far wrong. This morning I had twenty-four students. When I get home, there'll be three or four cancellations and then I'll have maybe twenty. Another week and I'll be down to your two grandchildren. Why not? Why should anyone pay for something he can get free?"

"Sam Beyers is a crook," the postmaster said to me. "You shouldn't take his advertising."

"Sam isn't a bad guy," I said. "I don't like what he's doing with that robot, but as long as there's nothing improper in his advertising, I can't refuse it."

The postmaster shook his head gloomily. "Maybe if the professor would advertise . . . "

"I offered him some free ads," I said. "He wouldn't take them."

"It isn't necessary," said the professor. "In another week, Beyers will have almost all my students. In a month or so, I'll start getting them back. I can wait. Did my music come in?"

He stretched out long, graceful fingers for the slender package of music.

I picked up the *Gazette's* mail and thumbed through it in a hurry to see how many checks might be enclosed before I hurried off after the professor. He was standing at the edge of the Waterville Park, watching a game of scooter ball.

As we looked, one of the boys got the ball squarely in his firing sights and scored a direct hit. It looked like a triple mark. In fact, it looked as if the ball would carry all the way to the river. It didn't —the wind held it up—but it would have made the river on the first bounce if it hadn't been for a nervy little red-headed boundaryman on a red scooter. He headed straight for the water, executed as neat a skid as I've ever seen right on the edge of the bank, and netted the ball. He had it jammed in his launcher by the time he'd completed the skid, and he laid a per-

fect shot right on the central bag. The rider was out by three lengths.

"Neat play," I said.

"That Pinky Jones is a live one," Professor Perkins agreed.

"Student of yours?" I asked.

THE professor grinned. "He was, up until last week. I almost feel sorry for the robot. Pinky tries to play with the violin upside down. He files the strings so they break during the lesson. One day he came in with a cricket inside his violin. He had it trained, somehow, so it would chirp when he wanted it to. 'Professor,' he said, 'something's wrong with my violin. It makes the funniest tone.' He went through the motions with his bow and the cricket chirped. 'That's easily corrected,' I said. 'An extra twenty minutes a day on the exercises.' That was the last time he brought the cricket."

The professor laughed, but I wasn't in a laughing mood. "You don't seem to realize how serious this Beyers thing is," I said.

He shrugged. "Of course it's serious. I lose money, and I can't afford to lose money. But people will soon find out that a robot can't give violin lessons. Does a machine know when a student needs maybe a little more padding on the shoulder? Does it know when a student needs a heavier bow? Does it know what student needs to be coaxed and what one needs a kick in the pants? Does it make the student know the difference between a nicely played phrase and one that isn't? No. No machine can do the thousand things any good violin teacher has to do. People will find that out soon enough, and the Beyers robot will go back to the factory."

"I think you're wrong," I said. "As long as Beyers is giving the lessons free, people will send their children to him. What have they got to lose? Long before they become dissatisfied with the robot, you'll have had to give in and move on. Just what is Beyers up to, anyway?"

The professor smiled and said nothing.

"I can tell you what I think he's trying to do," I said. "He wants to get rid of you. He'll give free lessons until he eliminates his competition, and then he can charge whatever he wants. Students will have to pay it or lose all the time and money they've already invested in their music education. He'll charge double what you charge for lessons. He'll have to, to get back his investment in that robot. Those things are expensive."

The professor looked amused. "So you think Beyers is after a profit."

"It isn't like Sam," I admitted. "He came up the hard way himself and he's always been pretty square. I know back nine or ten

years ago, when Hardson's appliance store was going broke, Sam loaned him money to try and keep him in business. Sam said business thrives on competition. Hardson went broke anyway, but Sam helped him as much as he could. That's why I don't understand this at all. But how else can you figure it?"

WE turned together and walked slowly along Main Street. I watched an aircar settle down in front of Warren's Feed Store. A burly farmer hurried in, and a moment later a robot rumbled out with half a dozen bags of feed. One of the Warren boys directed it from the doorway as it loaded the feed into the aircar.

Half a block down the street, we came to Beyers, Inc. Beyers sells a little of everything, but until lately most of his business has been in atomic appliances and machinery. This morning he had a new, glaring-red sign in the window: ALL KINDS OF ROBOTS. In the rooms above the store was the Beyers School of Music. And the robot teacher.

As we passed the store, the door opened and a girl tripped out gaily. Her long, golden curls fluttered after her as she ran. She wasn't more than ten, yet already a womanly loveliness was blended with angelic, childish mischief in her glowing face. It was Sam Beyers' daughter Sharon, and she darted past us laughing merrily. Then she glanced over her shoulder and came to a sudden stop.

"Hello, Sharon," the professor called.

She turned sullenly, her eyes on the professor. She stuck out her tongue.

"You shouldn't do that, Sharon," I said. "It isn't a bit polite."

She stuck out her tongue at me and hurried away.

"Now what brought that on?" I asked.

"I'm not very popular with the Beyers family," the professor said.

"Beyers worships that kid. She's pretty and smart and talented, and she's probably a comfort to him after the way his son turned out to be a dunce, but he has her spoiled rotten. She needs a good spanking."

"She's a nice girl," the professor disagreed.

We stopped suddenly as the bright tones of a violin drifted down to us. The professor pulled on my arm, and we moved away from Beyers, Inc., past the fancy facade of the Waterville Cafe (Aircar Parking in the Rear — Visit Our Roof Gardens for Gala Evening Entertainment), and paused to stare unseeing at the glamorous young ladies' frocks in the window of Terrestrial Styles Ltd., Waterville Branch.

"Beethoven," Professor Perkins

said, his smooth, ageless face taut with excitement. "Sonata in C Minor, Opus 30, Number 2."

"I know," I told him. "You made me play it, once."

He nodded. "This robot merits some respect. Few teachers know the violin's historical repertory well enough to come up with a forgotten masterpiece by an all but forgotten master."

I strained to catch the music. "The robot plays well."

The professor looked at me quickly. "You think so?"

"It also plays like a robot," I said.

There was something grimly mechanical in its indifference to technical barriers, in its rhythmical severity, in its scorning of emotional values. I told myself that the students would all play like machines. The professor may have found some comfort in that, but I didn't. The good people of Waterville and the surrounding country were not likely to be concerned about the finer points of musical taste and expression — as long as their grubby offspring *played.*

"Come," said the professor.

CROSSING the street, we took up a position in the doorway of Saylor's Pharmacy and stood listening to the dazzling thread of violin music that came drifting down with the sunlight. The music changed several times. I recognized a passage from an old concerto by Alban Berg and some modern pieces by Morglitz. The professor listened intently and said nothing.

Precisely on the half-hour, the music stopped. A moment later, the street door of the Beyers School of Music was flung open violently. Jeffery Gayman, aged eleven, charged out, flung himself on the waiting scooter and putted away toward the park and the game of scooter ball.

"Now that's odd," I said. "I didn't hear *him* playing once."

The professor smiled. "You haven't seen the robot in action or heard how it works? I thought not. The robot does not play the violin. It can't play the violin. It only assists the student."

I stared at him.

"Yes," he said. "What you heard was young Mr. Gayman playing. Three weeks ago, he does not even play the scales smoothly. He does not even play a nice little folk song and stay in tune. Then the robot gives him two, maybe three lessons, and he plays Beethoven and Berg and Morglitz like a mature artist. The robot is a wonderful thing, don't you think?"

He laughed and patted me gently on the back and hurried away.

I went back to the *Gazette* and locked myself in my private office and settled down to have a

good worry. The professor didn't seem greatly concerned about robot competition, but as editor of the only local newspaper for miles around, I knew the people. And I knew we were going to lose the professor.

Sam Beyers had plenty of money. There wasn't any limit to the time he could go on giving free lessons, but there was to the time the professor could sit around waiting for his students to come back to him. Eventually he'd have to go where he could earn money teaching.

Waterville needed the professor. He was our last remaining defender of culture. He'd come to Waterville twenty years before, when he tired of the high-pressure life led by artists in the big cities. At the time, Waterville didn't seem like a promising place for a music teacher. The professor was young then — in his early forties — and he had plenty of drive and enthusiasm. He finally got across the idea that art was not something to be housed in a museum or experienced as a kind of passive shower bath from visiscope. The average person could learn how to create or recreate art for himself.

"Kids don't get any physical benefit from *watching* scooter ball," the professor had said. "If you want to enjoy the spiritual benefits of art, you have to participate. You can't just watch it from the sidelines."

PEOPLE understood that kind of talk, and Professor Perkins built up a big class of violin students. He also trained some viola and cello and bass students, and when they were advanced enough, he started a string orchestra. He conducted it himself, free. If some sections needed help for a concert, he brought professional musicians out from the city and paid them himself. He gave several recitals a year, and he had his students in regular recitals. He got professional accompanists to help out, and naturally he had to pay them. I knew that the professor's savings couldn't be large. He'd invested too much money in culture for Waterville.

These concerts and recitals were events. Everyone in the area had at least one relative on the program and everyone came — admission free, of course. And it didn't stop there. The professor made arrangements for a couple of young artists to spend their summers in Waterville, giving inexpensive art lessons to those interested. What that cost him, I couldn't guess. When my father died and I took over the *Gazette*, the professor had me sponsoring story contests and poetry contests and essay contests, and running the winners in the *Gazette*. At least

that didn't cost him anything — I put up the prizes myself.

But the theme was the same: don't watch art from the sidelines — have a go at it yourself. With the professor pushing it for twenty years, that philosophy really took hold. We had everything from wood-carving clubs to oil-painting clubs, from poetry-writing clubs to musical-composition clubs. And the professor was the guardian angel of each and every one. Almost every kid that had grown up during the twenty years he'd been there had studied an instrument at one time or another, and so had a lot of the adults. The professor had become a local institution. Everyone loved him, especially the kids.

It was hard to believe that people would throw him over for some novelty like Sam Beyers' robot, after the contribution he had made. I suppose the robot had the same appeal as a new kitchen or farming gadget that everyone rushes to buy. There's something intriguing about a robot that can give music lessons.

And, in addition, the lessons were free — and would be, until Beyers got rid of the professor.

Then there was another worry. If the robot could actually take one of the professor's beginners and have him playing Beethoven and Berg and Morglitz after two or three lessons . . .

I couldn't come up with an answer. I told myself that the power of the press should be able to accomplish something, but if there was a way to use it, I didn't see it. And time was important. I decided to have another talk with the professor.

THE professor's small house is out on the edge of town, away from any immediate neighbors. He wanted it that way, so his music lessons wouldn't bother people. Also, he likes a little extra space because, in addition to his other talents, he is an amateur gardener. In the summer, his yard is knee-deep in flowers.

His daughter Hilda met me at the door. There were wrinkles in her plump face that I hadn't seen before and her mouth drooped mournfully. Obviously she was upset. The professor's life had been comfortably secure, and suddenly everything was falling apart.

"He's out in back, in the garden," she said. "You sit down and I'll call him in."

I sat and waited. In most homes, it would have been the living room, but in the professor's home it was his studio. It was attractively furnished, with pictures of composers on the walls, and a framed page of that odd-looking medieval music, and pictures of orchestras the professor had once played in. The room was air-conditioned, but I

happened to know that it was the only air-conditioned room in the house. The professor did not waste money on physical comforts. His money went for culture — Waterville's culture.

He came in, a little surprised to see me, but eagerly hospitable. Hilda faced him glumly. "Mrs. Anderson called," she said. "Carol . . ."

"Ah, yes," the professor said. "Of course. Carol goes to Beyers and the robot gives her lessons free. Today she has trouble with the little exercises, and tomorrow she plays a Morglitz concerto without any mistakes." He winked at me. "The robot is a wonderful thing, eh, Johnnie? How many does that leave us? Twenty-two?"

"Twenty-one," Hilda said. "You forgot about Susan Zimmer. Or didn't I tell you?"

"You didn't. But it's quite all right. Well, Johnnie? What brings you to see an obsolete musician?"

We sat side by side on the sofa and Hilda brought us coffee and a small plate of cakes. I sipped my coffee, and the professor sipped his, and waited politely.

"What do you know about Beyers' robot?" I asked finally.

"Enough to know what is wrong with it," he said. "I've seen similar robots demonstrated in New York. I know of experiments which have been made with them. Beyers' robot may be an improved model, but they all have the same basic defect."

"How do they work? You see, I'm trying to put my finger on something I could use in the paper. In an editorial, perhaps."

"You keep on trying, don't you, Johnnie? I'm grateful, of course. It isn't necessary, though, and it would really take too much time and trouble. But I can tell you about it, just to satisfy your reportorial curiosity."

HE got up and helped himself to another cup of coffee. "I'm not just a selfish old fogy standing in the way of progress," he said. "There's a place for machines — yes, even in art there's a place. But the machine cannot replace the artist. It can assist him. It can stimulate him. It can relieve him of some of his mechanical labors. But the imagination and the feeling must come from the artist.

"Take the music-writer. The composer plays, and the music-writer writes down what he is playing. The machine doesn't compose, but it relieves the composer of the drudgery of making notes on paper. Writers and poets have the word-selector. The machine doesn't choose the word. It reminds the writer of the possibilities, and the writer must make the right choice. There are the theater amplifiers. The machine can't make emotional expression out of

a series of words. All words are equal to a machine. But it can deliver the actor's natural voice to the people in the rear so he doesn't have to shout when he should be whispering."

"How can a machine stimulate?" I said.

"You've heard of the composing machines?"

"I thought they were a joke."

"They were, as long as they were devised to follow a system. The music they wrote was perfectly correct, and horribly dull and naive. Then somebody built one with no system at all. What it produced was absolute chaos, but scattered through that chaos were beautiful tonal effects that the machine happened on by accident. It took a great artist to understand those effects and use them as they should have been. Morglitz used that machine in his last compositions. It inspired some of the greatest things he wrote."

"I see," I said. "Then where does the robot teacher come in?"

"It doesn't. The machine becomes the artist, and the artist becomes the machine. It's just as if — well, take that thing Warren uses to carry bags of feed and the like. Supposing that instead of actually carrying the load, the machine merely strengthened a man's spine so he could carry a bigger load himself. That's what the robot teacher does. It gives the student proficiency without understanding. He can carry a bigger load while the machine is helping him, but take the machine away and he's no better off than he was. Worse, maybe."

"I still don't understand," I said.

"Well, the robot is not pleasant to look at. Tentacles all over. It tells the student when his violin is in tune. It places his fingers and arms in the correct position. The position is perfect, because the robot won't let it be anything else. The student can't play out of tune, or play a wrong note, because there's a tentacle on each finger, and the robot won't let the student put the finger down in the wrong place.

"The robot flashes the music on a screen and the student knows just what he's playing, because each measure lights up as he gets to it, and disappears after he plays it. If he bothers to watch the screen, he knows. If he doesn't watch it, it doesn't make any difference. The robot won't let him make a mistake. I saw a robot demonstrated with some younger children who were scared to death of the thing. It ignored their crying and went right ahead making them play."

I FROWNED. "That's bad. I'd hate being taught that way as a kid."

"Actually, the robot doesn't

teach anything," the professor said. "All it does is use the student like an instrument. Without the robot, the student can't play alone any better than a violin can play by itself. A man in New York did some research. He started one group of students with a violin teacher and another group with a robot. At the end of two years the teacher's students were coming along nicely, and the robot's students couldn't play a thing. Except with the robot, of course. They could play anything with the robot."

"What if you were to do an experiment like that in Waterville?"

The professor shook his head. "Time," he said. "If I gave lessons for nothing, I could get some of my students back, or get some new students, but it would take too long to prove anything."

"Is there any chance that the robot might be harmful?"

"Unless it's used by an expert, it might be. And Beyers hasn't got an expert. Muscles have to be developed gradually. It is certainly not good to force a young person's fingers to play difficult music before they are ready for it. There was a composer named Schumann. Nineteenth century. You probably haven't heard of him. He was a pianist, and he built some kind of gadget to exercise his fingers. He ruined his career as a performer."

"Was he an important composer?" I asked.

"He was fairly important."

Suddenly I felt better. "That's something I can use. It makes good material for an editorial. 'Is the Robot Harming Our Children?' That'll make people sit up and take notice."

He shook his head sadly. "People never stay sitting up very long. Too uncomfortable. No, Johnnie. You'd need a lot of research data and a lot of time."

I got up and paced the floor restlessly. Hilda came in and cleared away the coffee things, and then she came back to the doorway and stood there wringing her hands.

"What are you going to do?" I demanded finally. "Just wait?"

"Just wait," he said. "A machine cannot replace the artist. Remember that. And a teacher — a good teacher — is an artist."

"I wish I knew what Beyers is trying to do," I complained.

"You know what he thinks of his daughter. She's the smartest kid in town. She writes stories and poems, and she's won first prize in the last two contests you sponsored. She dances as though gravity doesn't exist. She acts in plays. He figures she ought to be marvelous at anything she tries, and he sends her to me for violin lessons. I send her home again. She's a lovely girl, and she's smart and

talented, but she's also tone-deaf. The violin is not for a girl who can't hear what she's playing.

"Beyers thinks it's an insult. He says her being tone-deaf doesn't make any difference — his girl can do anything, and he'll show me I'm wrong if it's the last thing he ever does. So he gets the robot to give Sharon lessons, and while he's at it, he gives free lessons to everyone and tries to take all my students."

"So that's how it is," I said. "Beyers would naturally hate anyone who suggested that Sharon wasn't perfect in every respect. But you could have avoided all this trouble by just going ahead and giving her lessons."

"I try to be an honest man, Johnnie. There are lots of things the girl can do well. She shouldn't waste her time and money on the violin."

"Well, I'm glad you're so sure things will be all right. I wish I could feel certain about it. I like to help things along a little—speed them up."

HE looked thoughtful. "There's only one way, I think, to speed things up. And that's impossible. I'd have to arrange to have the robot give me a lesson, but Beyers wouldn't let me near it."

"Just what did you have in mind?" I wanted to know.

He shook his head without answering.

"If all you want is a lesson," I said, "I can arrange that easily enough. Beyers will have to give it to you. He's been advertising free lessons for anyone."

"He wouldn't accept me."

"If he doesn't, he's guilty of fraudulent advertising. Here, let me call him."

I went over to the visiphone and cut off the visual transmitter, so Beyers wouldn't know where I was. I put through the call and got Beyers.

He laughed and said, "Trouble with that ad, I suppose. I should have had it typed. No one can read my writing."

"I have a new student for that robot of yours," I said. "When can he come in for a lesson?"

Beyers was suddenly enthusiastic. He'd been trying to interest me in the robot—he thought I hadn't given it the publicity it deserved.

"Send him over," he said. "There's some time open right now."

"I'll bring him myself," I said, and cut off.

"Let's go," I said to the professor.

He picked up his violin. I was already nervous by the time we got outside the door, and it didn't help me any when the professor kept stopping all the way down

the walk to admire his pet flowers.

We panted our way up the stairway to the Beyers School of Music. "Beyers says he's going to put in an anti-grav," I said. "I guess he figures this institution is going to flourish."

At the top, we entered a small, comfortably furnished waiting room. There was a large color photo of Sharon Beyers on the opposite wall. She was lovely and doll-like in her dancing costume. On the right wall was a black-and-white character study of Sharon Beyers, beautifully done. On the left wall, and the wall behind us, more Sharon. If Beyers ever had a picture made of his teen-aged son Wilbur, I never saw it. He probably kept it in the stock room.

I walked over and touched a button. A moment later, footsteps came banging up the stairway and Wilbur burst into the room. He is kind of an unfortunate happy medium — not quite ugly enough to be repulsive, not quite intelligent enough to appear normal. He grinned at me, then froze when he saw the professor.

"What's he doing here?" he yelped.

"I've come to take a lesson," the professor said peacefully. "Mr. Cranton made an appointment for me."

Belligerent suspicion gripped Wilbur's young face. It took him quite a while to think of the next question, and when it came, it wasn't especially brilliant. "What's the big idea?"

"The idea," I said, "is that the professor is here to take a lesson."

"He ain't no student!"

"Never too old to learn," the professor said cheerfully. "Don't they teach you that in school? No? Such a shame. You'll be as old as I am some day and you should remember that. When a man stops learning, he's already dead. So is a robot."

"I won't give you a lesson."

"Not you," said the professor. "The robot. The robot gives me the lesson."

FOR the second time, Wilbur had to grope deeply for his words. Finally he said, "I better get Dad."

His footsteps went slamming back down the stairway. He slammed back up a little later and waited at the top. Sam Beyers came up slowly. He is a slight, quiet-looking man with graying hair and a carefully trimmed mustache. Generally he has a friendly smile and a pleasant-looking face, but there was nothing pleasant in the glance he threw at the professor. It was virulent hatred.

He turned on me. "What's Perkins doing here?"

"You told me to bring him over for a lesson," I said. "I brought

him. Let's have the lesson."

"Let him give himself lessons. Out of here, both of you."

He was ready to throw us out bodily — or make a good try at it. His face was white, with a dull red touch of anger in his cheeks. His hands were trembling. I felt sorry for him, in a way. I suppose too much love can easily counterbalance itself with too much hatred.

I shrugged and winked at the professor. "It's his business," I said. "Let's go look up Tom Silvers and have him draw up a couple of affidavits for the District Attorney."

It hit Beyers like a splash of cold water. He squared his shoulders and said icily, "I'll run this business the way I want to run it."

"No, you won't," I told him. "For three weeks, you've been advertising free lessons for *anyone*. If you refuse to give the professor a lesson, that makes it fraudulent advertising. Check that with your lawyer."

He had himself under control by then. The red was gone from his cheeks, but the pasty-white color that remained wasn't much of an improvement. He sat down heavily and glared at the professor. "What are you after?"

"Music lessons," the professor said.

"If he thinks the robot is a good thing, he'll retire," I explained. "You can have all his students."

"I'll get all his students anyway," Beyers said. He meant that, too.

"Maybe not," I said, "when people start wondering why you won't let him have a lesson."

Beyers looked at him slyly. "It really might not be a bad idea," he said, half to himself. "If the robot can give Perkins lessons, people will know it can give anyone lessons." He jerked erect. "Give him a lesson, Wilbur. I want to watch this myself."

Wilbur led the way into the next room, the sanctuary of the robot, and the rest of us trailed along. The professor got out his violin and approached his rival calmly. The robot stood in the center of the room, a stately edifice of glistening metal and plastic. The multitude of metallic tentacles hung limply at its sides. On the back was an imposing control panel; on the front was a darkened screen and a row of inset signal lights.

I GLANCED sideways at Beyers. He had already lost interest in the proceedings. He'd seated himself in the corner and was staring across the room at a full-sized photo of Sharon. I thought to myself, in a few more years that girl will be a beauty, and woe to the young men who try to court her!

Wilbur bustled about nervously, measuring the professor and fussing with the dials on the back of the robot. He adjusted the screen to the professor's eye level and edged him forward until his shoes slipped into recesses in a protrusion of the robot's base. Then he ducked behind the robot, giggling.

"Beginner?" he asked.

"Anything you like," the professor said.

"We'll call you advanced," Wilbur announced. He threw a switch and the robot hummed quietly. The word TUNE flashed on the screen.

The professor scornfully plucked his strings, one at a time, and a green light flashed as each tone sounded. Wilbur stood staring at the robot.

"Wow!" he exclaimed. "Most of the kids take ten minutes to get green on that."

"I believe you," the professor said.

Music flashed on the screen, but he made no motion to raise his violin to playing position. The tentacles suddenly encircled him. As I watched in amazement, the robot gently positioned the violin for him, eased his elbows over to the proper angle and raised his bow. The violin tone filled the room, a brittle, mechanical tone. I knew it was not the professor playing.

He called out above the music, "I am completely relaxed. I do nothing at all and still the robot makes me play. You see, Johnnie?"

"Incredible!" I breathed.

Off to my left, I heard Sam Beyers chuckling quietly.

"Now I play myself," the professor said. The tone was instantly warm and expressive. "Now the robot relaxes. But supposing I try to make a mistake. Here, you see? No mistake. And this *fortissimo* passage — supposing I try to play *pianissimo*. But it stays *fortissimo*. If I relax, the robot puts the necessary pressure on the bow."

"Incredible!" I said again.

The music flowed on to the end of the exercise. Sometimes it was the professor I heard, and sometimes the robot, and the professor kept up a running comment on what was happening. Then the tentacles dropped away, the screen went blank, and the word TUNE appeared. The professor stepped back.

Wilbur Beyers giggled proudly. Sam walked over and started to place his hand on the professor's shoulder. Then he changed his mind. The color of his face was back to normal, but his smile wasn't much more than a vindictive glint.

"Do you think my robot can teach you a few things, Perkins?" he said.

"It is quite possible," the pro-



fessor declared. "It has already given me an idea or two. But the tone is bothering me. Would you mind if I changed strings?"

"Of course not. Go right ahead."

AS the professor took new strings from his violin case, voices drifted in from the waiting room. Mrs. Karl Anderson stuck her blonde head through the door. "Is it time for Carol's lesson? *Oh!*" She stared at the professor.

"Bring Carol in, Mrs. Anderson," he said. "She has her lesson as soon as I finish mine." He turned to Wilbur. "Right?"

"Right," Wilbur giggled. He winked at Carol, and that young lady blushed and scurried over to seat herself very primly beside her mother.

"It won't take much longer," said the professor. "I'll try maybe one more exercise. Does it have something difficult?"

"Sure," Wilbur said. "I'll give you something good and hard. It's pretty good stuff. I was playing it myself yesterday."

The professor moved back to the robot, took his position and plucked his strings. The green lights flashed and the music appeared.

"Ah!" the professor said. "Paganini. So you play Paganini, Wilbur. That is wonderful."

"Never had a lesson in my life, except from the robot."

"You don't say!"

Beyers broke in, "Sharon plays Paganini, too."

The professor smiled and the tentacles went into action. I leaned forward, waiting to see who would do the playing — the professor or the robot.

But it was neither. From the first few notes, even Sam Beyers realized that. He bounded to his feet and raced across the room. The sounds the violin produced were vaguely music, but a clumsy, distorted music. Red lights crackled on and off. The robot's faint hum became louder. Wilbur buried his face in the control panel, mouth agape.

"Something's wrong," Beyers said. "What'd you do, Wilbur?"

"There's — nothing wrong here," Wilbur gasped.

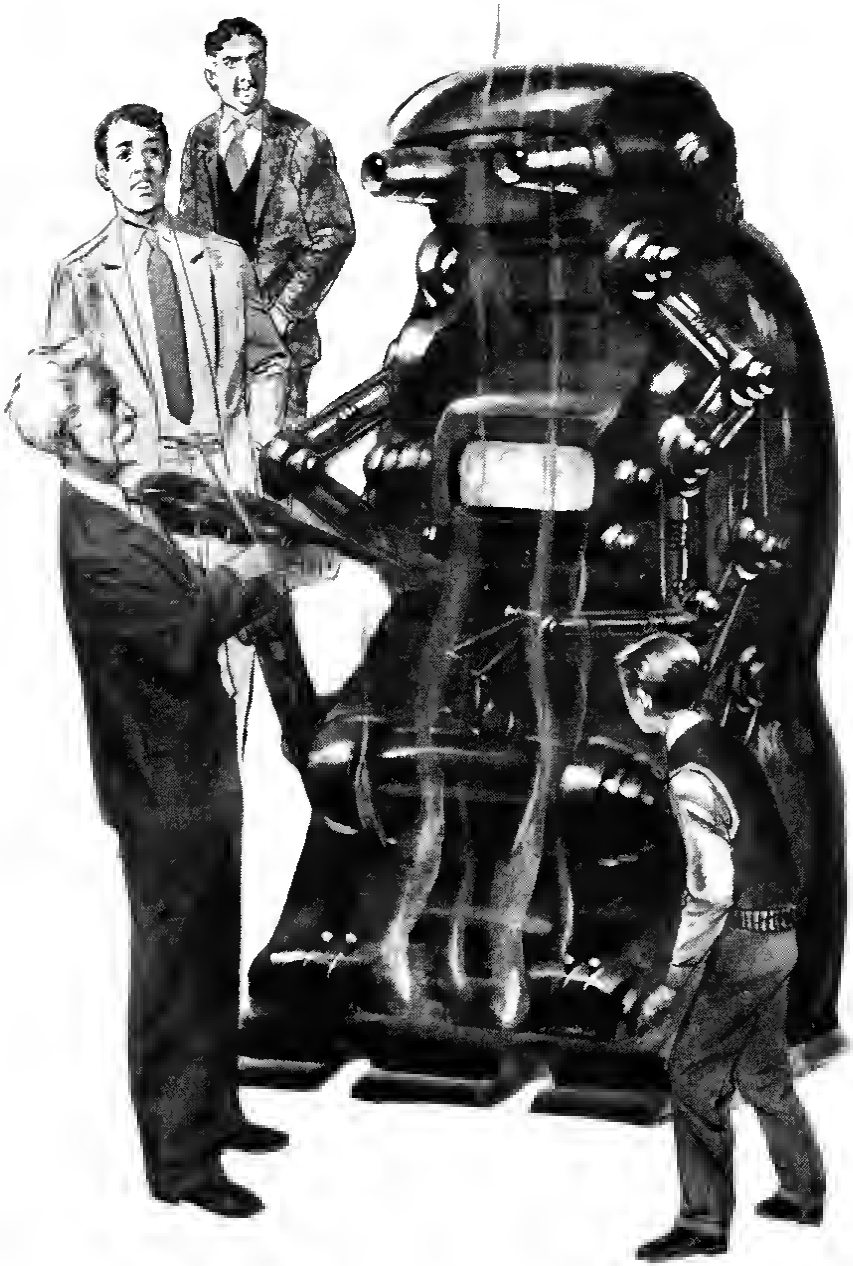
The robot's hum became rumbling thunder, punctuated with shrieks. The violin labored on and the robot's shuddering vibration shook the room. A thin ribbon of smoke curled from its base and drifted upward.

"Turn it off!" Beyers shouted.

Wilbur reached for the switch—too late. The robot's lights went off. The screen went blank. The tentacles released the professor and drooped downward, shaken by an occasional spasm.

"What happened?" the professor asked innocently.

I glanced at him, and saw him



working hard to suppress a grin.

Beyers ignored the question. "Wilbur," he snapped, "get Ed up here to take a look at this thing."

Wilbur scampered away. Smoke continued to pour from the base of the robot. Beyers hurried over and flung open a window.

"Doesn't Carol get her lesson?" Mrs. Anderson asked.

"I don't know," Beyers said. "We'll have to wait until Ed — here he is. Ed, what's got into this thing?"

Ed shrugged his massive shoulders and dropped a box of tools on the floor. Beyers bent over him as he went to work on the robot's backplate.

"Ed's really handy with these things," Beyers said. "He can fix just about anything."

ED twisted off the plate, flashed a light into the robot and whistled. "Can't fix that," he said. "What happened? This thing's really burned out."

"What's that?" Beyers demanded incredulously. "You can't fix it?"

"Have to send it back to the factory. Needs a whole new unit in there."

"Doesn't Carol get her lesson?" Mrs. Anderson repeated.

Beyers gestured helplessly. "I guess not. As soon as I get it fixed, I'll let you know."

"Well, I like that!" said Mrs. Anderson indignantly. "How is Carol going to learn to play if she can't depend on her teacher? Professor, can you give her a lesson today?"

"You call Hilda," the professor said. "She makes the appointments."

"Now just a minute," said Beyers. "It won't take long . . ."

Mrs. Anderson stared him down. "The professor charges for his lessons, but at least he's dependable."

"That's right, Mrs. Anderson," the professor said. "I take cold shots and allergy shots and vitamin pills, and now and then maybe I have a sprained ankle or a cut finger. But never yet have I missed a lesson because of a blown fuse."

Mrs. Anderson left, with Carol firmly in tow. The professor patted Wilbur on the back consolingly. "Such a pity, Wilbur. Maybe you wore the robot out playing too much Paganini. You let me know when you get it fixed and I'll finish my lesson."

Sam Beyers reared back and pointed a trembling finger. "You're responsible for this, Perkins. I don't know what you did, but I'm going to find out, and then I'll sue you for everything you've got. I know it isn't much, but I'll sue you for it!"

"Mr. Beyers," the professor said gently, "I'll give you some friendly advice. Send the robot back and forget about it. It's a wonder-

ful thing, but it can never be a music teacher. I've been playing for nearly sixty years, and teaching for fifty, and I know. Robot or human being, there can be no violin teacher without a sense of humor. Shall we go, Johnnie?"

We went down the stairway and walked along Main Street. The professor was smiling faintly and humming a little tune to himself. If I hadn't been so curious, I could have done some singing myself.

"All right," I said when I couldn't stand it any longer. "Just how did you manage that?"

"Tricks, Johnnie. In fifty years of teaching children music, I've learned tricks no robot will ever know. I even remember a few tricks from the time when I was a little boy."

"That I can believe," I said. "What was this particular trick?"

"I STUDIED at a conservatory when I was young," the professor told me. "Boys will play pranks, you know, and once they played a prank on me. I was to play a little solo in a recital, and just before I went on, they took my violin and switched all the strings around. The strings have always been in the same order on the violin, maybe from the time violins were first made. They go from lowest to highest — G, D, A, E. The boys switched my strings around and put the highest where the lowest should have been, and the lowest in between somewhere, and when they got through, none of the strings was where it was supposed to be.

"I knew what they'd done, of course, as soon as I got on stage and started to tune. But there I was, out in front of the audience, and the piece I was to play was not difficult. I tried to go through with it, and it was pretty bad. After about five measures, I had to stop, so I made a little speech telling the audience what had happened, and I changed my strings back right there on the stage. The audience thought it was a good joke. They had a good laugh, and when I got the violin fixed, I played rather well and got a lot of applause. And the boys took up a collection and bought me a little medal, for courage under duress. I still have it."

"Then when you put on the new strings . . . "

"I changed them around. Instead of G, D, A, E, I made them E, A, D, G. A human being is the most adaptable thing there is, but not even an expert human musician could adapt to that—not after always having the strings in correct order. The robot didn't have a chance. Its instruments told it the strings were in tune, but wherever it directed my fingers, the wrong notes came out. All it could do was break down. Maybe

I cost Beyers a lot of money, but I'm not really sorry. The robot is not good for the students. With it doing everything for them, they could never learn."

"Oh, it won't cost Beyers anything," I said. "He's too clever for that. He'll have a guarantee on the thing, and probably he only bought it on approval. But he'll get the robot fixed, and try again, and he certainly won't give you another chance to mess it up."

"It doesn't matter," the professor said. "All I really did was speed things up a little. It would have happened anyway, sooner or later. The boys will have their little tricks, and it would have been the filed strings, or someone with vaseline on the bow, the way you did once—no, I haven't forgotten—or a violin with the sound post removed, or the strings in all different kinds of wrong order, and the robot would have gone back to the factory. If the boys run out of tricks, I can always make a little whisper to one of Beyers' students. 'What would happen if you did this?' The robot won't have to go back to the factory many times before the parents get disgusted with it. A violin teacher . . ."

"I know," I said. "A violin teacher has to have a sense of humor."

He stopped and grabbed my arm. "Johnnie, we rushed things too much. We should have waited."

"How's that?" I said. "What's the matter?"

He looked at me slyly, his eyes sparkling, his face wrinkled into a mischievous smile — the smile of a small boy who's been bad and knows he won't be spanked. I told myself I'd wasted a lot of worrying. The professor was a match for any robot and he knew it. He hoped Beyers would get the thing fixed so he could have another crack at it. I could imagine him getting together with some of his boys and saying, "This time we'll try . . ." No wonder the kids loved him!

He turned away and shook his head sadly. "We should have waited. I'd give anything to know what the robot would have done about Pinky Jones' trained cricket."

— LLOYD BIGGLE, JR.

★ ★ ★ ★ ★

The Ethical Way

By JOSEPH FARRELL

There is o way around every tobu, knock on wood — but just watch out that the wood doesn't knock back!

"IS it time?" Jarth Rolan asked anxiously. Pilot Lan Barda pushed him gently back into a seat. "No, but very soon. And be calm—you're jumpier than a human."

"But we've waited so long—yes, a long time. And I *am* anxious to get home."

Lan peered calmly out of his vehicle. They were hovering in Earth's upper atmosphere, at the permitted limit.

"Be patient. These people have almost reached the critical point. We'll get the signal before long."

Jarth Rolan popped out of his chair and danced about in nervous excitement.

"Won't it be dangerous? For us, I mean. Going down into that radioactive atmosphere. And how about them—will any of them live? Suppose we wait too long?"

Lan Barda laughed. He was a husky humanoid, pinkish of skin and completely hairless, like all galactics. He slapped Jarth Rolan's back.

"We have experts watching.

Illustrated by JOHNSON

These humans have used four cobalt bombs, and plenty of smaller stuff. The fallout is close to the danger point. Our observers will know just when we can move in because—" he winked and his voice dropped to a conspiratorial whisper—"they're using automatically controlled instruments."

"Oh, my!" Jarth Rolan clapped his hands to his cheeks. "But those are robots—and the use of robots is against religion."

"I know, Jarth. But we won't be using them much longer, will we?" He poked a playful finger into Jarth's ribs. "We'll have slaves—and it'll be completely ethical."

Jarth Rolan winced. "Must you use that word 'slaves,' Lan? It sounds so—" He waved his hands.

Lan laughed again. "Be honest with yourself, Jarth. You're out to make a few *dopolins* for yourself as a slave raider."

"An entrepreneur," said Jarth. "In personal services."

Lan Barda became serious. "There's the signal—it's time to go down. Let's go, Jarth, before somebody else gets them all."

AN hour later, it was Lan Barda's turn to be nervous. He watched a needle creep into the red zone.

"Hurry, Jarth. We've been on this planet long enough. That fifth cobalt bomb is sending the index up fast. Can't you skip these last few?"

"Oh, no. Very unethical to leave these three here to die. Must take a small chance, you know. Besides, see the sign on that taxi—just married. A fine young couple. And a fine young taxi driver. Couldn't sleep if I didn't help these three."

"Couldn't sleep thinking of the profit you'd passed up. Here, let me take that one. We have to get out of here fast."

Jarth Rolan fluttered anxiously about the pilot until they were safely above the poisoned atmosphere.

"How many?" he asked. "Did we fill the ship?"

Lan Barda checked off items on his clipboard. "A thousand and three, with these last ones. You'll make a good profit."

"Not so much the profit. Oh, no. More than that involved. Ethics and religion, Lan. Yes. With all these sla—servants, our people will never have to use robots. They'll be relieved of routine labor and can devote their lives to art and science. And it's all ethical—oh, yes, for these people were doomed."

"Want to know something, Jarth?" Lan Barda bent closer and whispered wickedly. "This ship has automatic controls. Has to. No living being has fast enough reactions to handle an interstellar ship. All robot driven, at least in part."

"Robots! May we be forgiven!" Jarth stared suspiciously at Lan Barda. "Sometimes, Lan, I think you are an agnostic."

The pilot became more serious. "Maybe, Jarth. In our work, we must use robots. We joke about it, but it goes against all galactic belief to let a machine think for us. Maybe that's why we pilots are so cynical."

"A galactic is always ethical," said Jarth Rolan solemnly. "This affair, for example. We let these poor creatures of Earth handle their own affairs with no interference until they doomed themselves. It was unethical to intervene a minute sooner. Yes—the ethical way and I feel better for it and proud to be a galactic."

"That's true," said Lan Barda. "A galactic wouldn't feel right, being a member of the dominant race of the Galaxy, if he didn't help the less fortunate."

JARTH Rolan had prepared a center on his estate for the slaves. The demand was greater than the supply. He chatted happily with his wife.

"An excellent investment, Shalla—yes. And the highest group council wants us to lease them out by the day for the present instead of selling outright."

She nodded. "That's the fair way. Everybody can have a turn having a slave."

"And," said Jarth, rubbing his pink hands, "we'll collect every day and still hold title."

"Will they multiply fast," asked Shalla, "so there will be enough for all?"

"They always did on Earth. Yes. By the time we pass our estate on to our son, this investment will have multiplied in value."

At the center, the slaves clustered about the bulletin boards to read the slave code. The three who had been brought aboard last stood together. Laurent Crotier and his wife Jean were still in their wedding clothes, and Sam the taxi driver was in uniform. They read the seven articles of the slave code.

"We have to work twelve hours a day," Laurent observed. "And have off every seventh day. This could be worse."

"We'll keep our eyes open and wait for our chance," Sam piped up. "Some day we'll make a break out of here."

"Yeah," said Jean. "And remember, Frenchy, no kids."

Nine months later, Laurent, Jr., was born. Before the blessed event, Laurent went to Jarth Rolan with a complaint.

"She can't do it, work twelve hours a day now. You have to change the rules. By gar, if my wife die 'count of this, I goin' kill you, Jarth Rolan."

Jarth Rolan waltzed about nerv-

ously, biting his fingernails.

"No, we do not want her to have trouble. No. She will need proper rest. There is a meeting of the highest group council right now, concerning this. Others have the same problem. But yes, I will relieve her of work without waiting for the council's decision. Tell your wife to stay home, Laurent, until the baby is born."

Laurent pushed his luck. "And after that, too. A kid got to have a mother. I do the work for three, you let my wife take care of the family."

"Oh, this *is* a problem!" Jarth Rolan rubbed his fingers unhappily over his bald scalp. "Some of the other females are in the same condition. But it is like planting a crop — one labors hard at the beginning to reap a great harvest later. We will work this out."

The next day, fifteen articles amending the code arrived and were posted. Laurent read happily.

"Now," he said to Jean, "it is the law. You will stay home and have the baby."

"'And for such further period'," she read, "'as is considered necessary.' You sure told him off, Frenchy."

She squeezed his arm affectionately and his chest went out a little.

"And remember," she said, "this is the last one."

"Look at this rule," said Sam. "All kids must be educated. I'm only—" he winked at them—"thirteen. It's off the job and back to school for me."

Laurent blinked. "By gar, Sam, I think you been shaving pretty near as long as I am. But if Jarth Rolan ask me, I say I know Sam is thirteen."

Jarth Rolan came along to explain the amendments.

"We don't want the slaves to be ignorant. Oh, no. It will be worth extra effort and expense to reap the harvest. The slaves will work at many specialized tasks. Even personal servants will read and write letters and help at business and keep accounts—yes, indeed. We must assign some slaves to teaching."

ABOUT the time Laurent, Jr., started school, Laurent led a delegation to Jarth Rolan.

"We got some complaint to make. These food servings pretty small lately. We work hard, we have to eat more."

Jarth Rolan's facial skin had developed wrinkles, though the galactics' life span was comparable to a human's and he was only about forty. He fidgeted.

"I am sorry — oh, yes. Sorry. There have been delays in food shipments—the same trouble all over. Too many excused from the work force, you know. Most of the women are pregnant or have

children, and teachers and special assignments — but things will improve, believe me. Yes. You will soon find an improvement. Yes—very soon."

The delegation talked it over outside Jarth Rolan's house.

"He's been letting himself go," said a woman. "Did you notice how thin he's become? And the same with his family."

Laurent reflected. "To raise a lot of kids is hard. My father, he work like hell all the time. Raise his own food, don't depend on nobody. I think that land back of the center, we should plough it up and put in some potatoes."

"On our own time?" Sam exclaimed.

Laurent chuckled. "Well, Sam, you got no kids—you just a young boy eighteen years old. By gar, I think you have gray hair when you twenty-one."

The others joined the laughter. Sam's lie about his age had boomeranged — he had been kept in school and denied permission to marry until he was officially eighteen, a few months ago.

Laurent fingered his chin thoughtfully. "I think we look over that land. Maybe we get some time out from our regular work, we do some farming."

Before the blowup on Earth, the galactics had made occasional landings to gather animals and seeds of food plants. Certain centers were put under government control to grow food for the slaves. The people at Jarth Rolan's center saw that this arrangement was breaking down because of the increasing slave population and the diversion of labor to child raising. They looked over the piece of land and Laurent okayed it. They went back to Jarth Rolan. He approved at once.

"Oh, indeed. I can obtain all the equipment you'll need. Get started right away. We can grow a good part of our own food. Yes. I am sure it will work out."

"We goin' need some time for work the farm," Laurent pointed out.

"Oh? I thought maybe in your spare time—"

"You want to kill us?" Sam demanded. "Put us on an extra job after working us hard twelve hours a day?"

"But — there's so little coming in. Still, maybe you're right. Worth the extra trouble and expense now. Building for the future—that's the idea."

JARTH Rolan notified his group leader of the arrangement and it percolated swiftly up through the hierarchy to the council of the highest group heads, who directed policy for the entire Galaxy. There were nine of them and they talked over this development.

"I approve. We should have

done it this way from the beginning."

"Of course. But certain advocates of government control insisted on public ownership of the food farms—"

"What do you mean, certain advocates? If you mean me, be galactic enough to say so."

"I intend no personal offense to anybody. But there is bound to be inefficiency in any government project—"

The chairman pounded the table. "Stay with the subject. It has been suggested that each center grow part of its food. I am in favor."

"But it cuts down the available labor force. We're having complaints now about the shortage of slaves—"

"Think of the future. I admit the present situation is difficult. It's like raising a herd of prize cattle—all expense and no profit at first. Then the herd is built up and suddenly you're rich."

"But we're putting so much into it—"

"The more we put in, the more we take out. And they're multiplying rapidly. Remember our new goal of two slaves for each galactic—one for the day shift and one for the night. It's the only way our people can live a decent life, freed from routine labor, devoting themselves to art and science."

"That's right. We work so our children can lead the better life. It's worth some sacrifice."

The chairman stood up. "Most of us seem willing to endure a little hardship now for the benefit of our children. I suggest we endorse this new procedure."

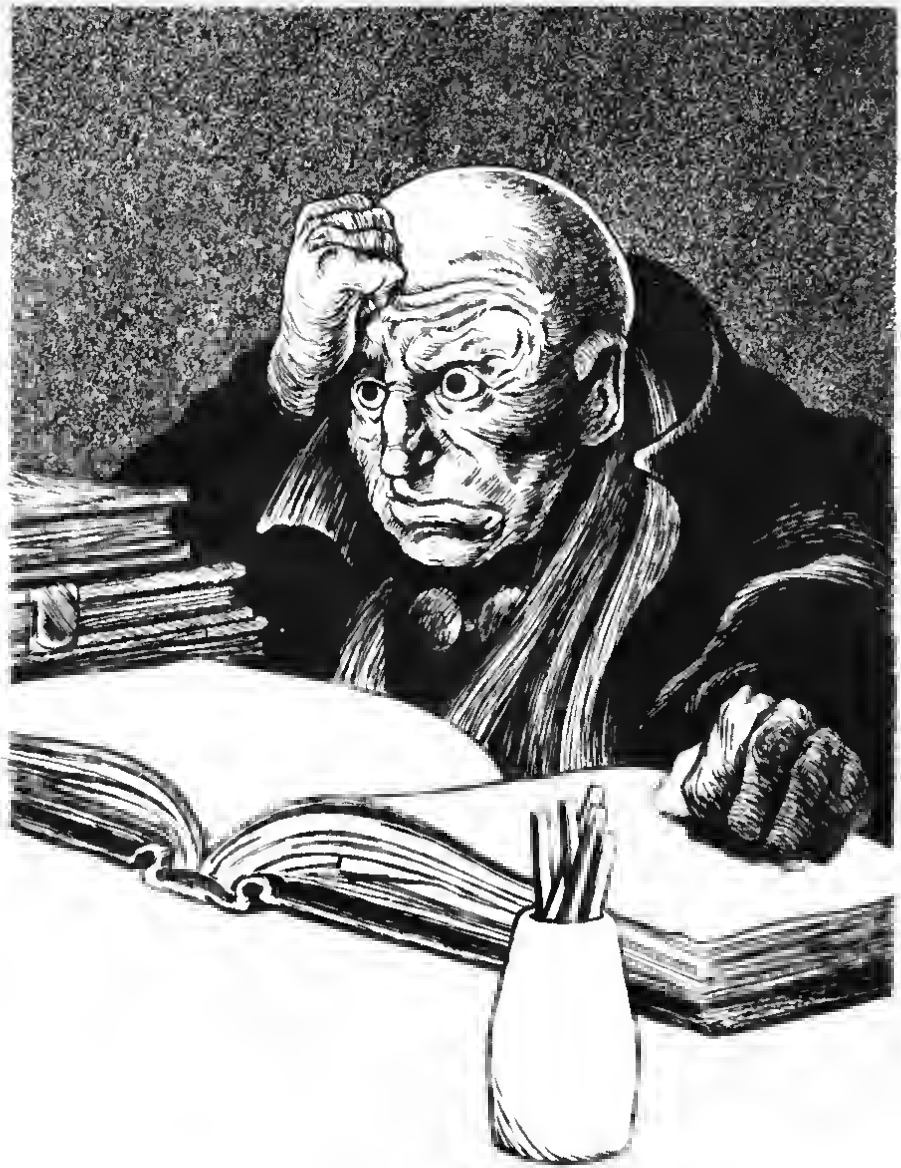
LAURENT, Jr., married the girl next door. Laurent celebrated the wedding with a barrel of beer he had brewed on the farm. Sam became glassy-eyed and lectured the young couple.

"Just wait for the right time. Rise up and capture their spaceships. That's what we'll do. We'll go back to Earth and then let them try to get us off it again."

"But Earth is dead," Laurent, Jr., objected. "We can't live there. Poisonous radiation."

"By gar!" Laurent drained another brew. "You believe everything they tell you, hah? We goin' show them sometime. Like Sam says, not now, but sometime. Maybe me and Sam don't do it, but don't you kids forget—you not goin' be slaves always. You watch for the right time, like Sam says."

His son looked dubious. "But what you told me about Earth doesn't sound so good. Like the way you were so cold and hungry in that shack in Canada. And Mama walking up five flights in New York after working all day in the garment factory. And all those wars! Why did you people



spend half your time shooting each other, Dad?"

Laurent belched indignantly. "By gar, boy! We was free! We don't have no galactic stand over us, do this, do that. We was free!"

"We don't work so hard," said his son. "And look at old Jarth Rolan and the others out there—they've given us the day off, but the galactics are all busy in the fields. Everybody has to work, Dad."

Laurent looked through a slight haze at the masters laboring in the potato fields. Farm work and teaching and other special assignments had created a shortage of personal slaves. Jarth Rolan gave preference in leasing slaves to those who came and helped him at the center.

Since having a personal slave was a mark of prestige among the galactics, many of those laboring on the farm were from the highest levels of society.

"They don't know nothing about raise potatoes," Laurent grumbled. "We put in complaint, by damn. We want each one have his own land. I work like jackass, I want to get paid for it."

THE highest group council was in session. One member was explaining: "It's the custom of tipping slaves. At first, those who could get a slave were so happy that they often gave him a few coins. Now the custom is firmly established — anybody who doesn't tip a slave is considered cheap. I do it and so do you."

"Of course. What's wrong with giving them a few *polins* now and then? Or a *dopolin* or two when they have a baby or a wedding?"

"Nothing wrong with it, in itself. But they don't spend anything. We supply their food and clothing; nothing else we have seems to appeal to them. The money goes out of circulation. It's estimated that half the money in the Galaxy is being hoarded by slaves."

"What? That's impossible. Just from those small tips?"

"Small tips, but day after day; year after year. Add up some time what you've given and multiply by the number who've been doing it."

"Then that's behind our economic troubles. A currency shortage. Can we take it away from them?"

"Of course not. Besides being unethical, it would turn them against us. They wouldn't understand."

"Then we'll abolish tipping."

"Too late. What we need is an ethical way of getting back that currency."

A new member spoke: "I understand that on Earth these slaves were often addicted to alcohol, gambling and various alkaloids. Perhaps we could introduce these

items, under government control, of course—"

He stopped. Eight pair of eyes were blazing at him.

"You're new here," the chairman said. "If you ever make another suggestion like that—"

They pondered. The chairman fingered some papers.

"Here's a suggestion. The slaves have been petitioning for the right to own land. It seems to be the only thing they'll spend their money for."

"Impossible!"

"But maybe—"

"We could limit the holdings."

"And have the land subject to condemnation by the government at a fair price."

The chairman called for order. "Let's argue this out. Remember the slaves will need time to work their land. Since their work day is down to nine hours, we'll have to arrange something."

JEAN had been complaining about the lumps in the mattress. When Laurent took them out, there was enough in galactic currency to buy a piece of land in his name and hers, plus a plot for each of the children, and a new mattress as well. Sam was suspicious.

"They're out to get what little we've been able to save, Laurent. They can take the land anytime—for what they call a fair price. Fair! Fine chance they'll be fair about it."

But Laurent kept the land and was even able to buy a piece for each grandchild, although they arrived faster and faster as his own large family grew up and married. One day Jean called him to a new house at the edge of the widely expanded center to see the latest arrival.

Laurent poked a finger at the squalling creature. "So I'm another grandpa. Which one this?"

"This time you're a great-grandpa, Frenchy. This is Laurent 4th."

"You mean we gettin' that old? By damn! Well, I'm buy him a piece of land, too. So much new building, this land be worth plenty when he grows up."

The 512th amendment permitted slaves to retire at 65. Laurent was a leading real estate dealer by that time. He had twenty-three children and more grandchildren than he could count. The center was grown to a city, its main street running through what had been his first farm. Sometimes Laurent relaxed in his rocking chair and needled Sam.

"By gar, Sam, if you not the oldest-looking man of fifty-five I ever see. I think you a hundred years old when you retire. When you havin' that revolution?"

"The day will come if we keep after the young ones. But damn it, Laurent, it's hard to talk any

sense into them. Some of them can't even understand me."

"Well, they all talk galactic, Sam. My grandson, he call himself Loran Kotay. But these young people, they have to live their own lives. Hey, look at old Jarth Rolan up there, washing his windows. Old guy should retire, Sam. I'm goin' see a couple of my boys give him a hand."

BUT Jarth Rolan died before he could afford to retire and was replaced by his only grandson, Jarro Kogar. Laurent and Jean passed on shortly after, leaving nearly four hundred descendants.

Jarro Kogar was a newly married galactic in his early thirties. He moved into the mansion and talked things over with his wife.

"Don't see how we can afford a child right now. Wouldn't be fair to the child. Things will improve in a few years."

"Of course," she said. "We're young—we'll have time to start our family. If we wait, we'll be able to give them more."

They held similar conversations later and one day realized it was too late. Jarro Kogar died in his sixties. His widow directed the center for several more years. The slaves liked her and took good care of her. She left them the estate when she died.

Loran Krotalu protested to the authorities that the slaves didn't want the estate. But the group heads ruled it legal under amendment 1,486, especially since no relatives could be located.

Loran left the center and moved to another city where he found a galactic couple who wanted a slave. He and his family served the galactic couple for many years. This couple, like Jarro Kogar and his wife, were childless and when they both died, Loran and his wife were very grieved.

After the funeral, Loran went into the city. He returned hours later, tired and depressed.

"It's no use," he told his wife. "There's not an unattached galactic in the area. We might get a few hours work a week with one, but we can't have one to ourselves."

"But, Loran, *everybody* in our set works for a galactic!"

"I know," he said miserably. "But it's no use. There must be fifty slaves for every galactic. I've taken a job at the spaceship factory. It's the best I can do."

MEMBERSHIP on the highest group council had become a killing job. Chief problem was the revision of the slave code, which had 3,697 articles. After trying for years to simplify the code, the council members called in Loran Krovalo to fill a vacancy and take over the job.

Loran was known and liked by galactic and slave alike for his brilliant essays on the master-slave relationship. While he was on the council, the Cerberan affair broke out. The Cerberans, an intelligent saurian race from a globular cluster, exploded into the Galaxy in vast numbers. Military action became necessary.

"We can handle them," Loran told the council. "Our factories are mobilized and we have any number of spacemen. We have robot instruments for fighting that are better than anything they have. We can carry the war to their home planets."

Some of the galactics objected.

"But the use of robots is forbidden. We can't fight the Cerberans with robot-controlled weapons."

"Don't worry, sir," Loran said kindly. "We slaves will take care of it. Our form of religion doesn't prohibit robots unless they are in the shape of a man. We think of real robots as being human in shape."

One of the galactics rose.

"I know you're right, but my conscience won't let me vote for robots in any form. Therefore I am resigning from the council."

A second rose, then a third and fourth. They looked at each other, and one spoke for the group.

"We are also resigning. I suggest that four slaves be appointed in our places for the duration of the war. Then they will have a majority and no galactic need violate his conscience by voting for the use of robots."

The Cerberans were crushed, but the infested area was huge and the invasion of the globular cluster took time. The war emergency lasted fifty years. When it was over, the slaves called on the galactics to take back control of the government.

But the widespread use of robot mechanisms in the war had caused a reaction among the galactics. Their consciences simmered and a wave of orthodoxy swept over their race. There was difficulty in persuading galactics to leave their home planets to sit on the council, because faster-than-light ships used robot controls.

The slaves scoured the planet that housed the council and kept two or three seats filled with galactics for a while. But they were generally old, and they died, and most of them were unmarried or childless.

LORAN Crotay, twelfth-generation slave, sat in his home chatting with a friend from far-off Pornalu VI. Being in the space-shipping business, he had many friends throughout the Galaxy.

His wife answered the door and a pink humanoid shuffled in, mumbling greetings, and went into

the other room. He was middle-aged, studious and bespectacled, and he wore a wig. Loran's friend watched him curiously.

"Haven't seen one of them in years, Loran. We have a reservation for the poor devils on my planet. Don't reproduce very fast, you know, and they may become extinct. Too bad—they're so likable. Always so ethical and conscientious."

"I know." Loran nodded. "We let poor Vendro make a few *dopolins* tutoring our son. He's very intelligent and a good teacher. I like to help them all I can—the only ethical thing to do. I wouldn't feel like a slave if I didn't give poor Vendro a break."

"That's true," said his friend. "A slave wouldn't feel right, being a member of the dominant race of the Galaxy, if he didn't help the less fortunate."

— JOSEPH FARRELL

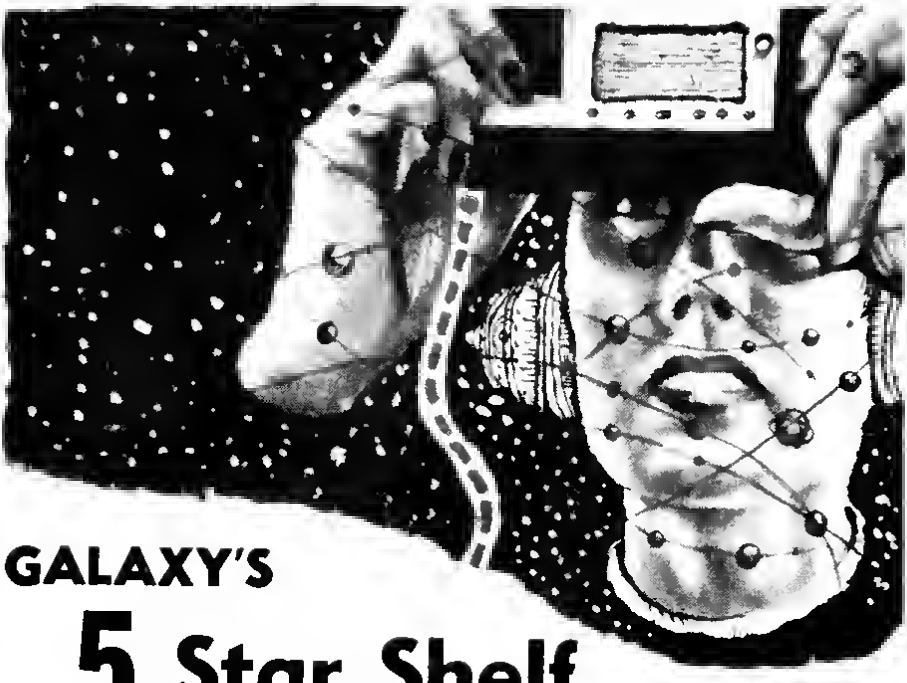
★ ★ ★ ★ ★

FORECAST

Safe outside the cosmos, touching neither space nor time, the Place is intended as a refuge for Soldiers after their raids on history — and pre-history and post-history, for the Change War ranges from the beginning of Creation to the end — or, despite the Conservation of Reality, may make it something that never even happened! But that is merely the ultimate fear of the grimly gay occupants of the Place. Change Death is more personal and likely — and it strikes in next month's volcanic conclusion of Fritz Leiber's THE BIG TIME — when mutiny turns the Place into a bomb in a bag!

With anything as large both in size and scope as the Leiber serial, it's hard to forecast the escort stories, but there will be one and possibly two novelets, plus, of course, short stories and our regular features . . . and Willy Ley in combat with an exasperating law of human nature.

THE BIG TIME, as noted above, deals with the Conservation of Reality; Ley's THE ISLAND OF THE STONE HEADS contends with the Conservation of Superstition . . . according to Shaw, the dispelling of one myth creates a vacuum into which an equivalent amount of nonsense must rush. Ley has more than enough cold facts to collapse a whole Sunday supplement legend. Now here's the interesting test: Will the legend collapse . . . or will hurriedly improvised mythology pour in to support the silly but unspeakably tough bubble . . . or will a completely new legend rise out of the fragments of the old?



GALAXY'S 5 Star Shelf

***ON THE BEACH* by Nevil Shute. *William Morrow and Co., N. Y.*, $3.95**

THE theme of the decline and end of civilization has been done to the point of exhaustion in SF and several times in mainstream literature. However, in this novel of the final atomic war's tragic aftermath, the demise is handled with uncommon power.

The story depicts the nine months of life left to Commander Dwight Towers, U.S.N., and those individuals, mainly Australian, whose lives are tied up with his command of the *Scorpion*, one of the last two operational vessels of the U.S. Navy.

Submerged for several days during the course of a routine mission in his atomic-powered submarine, Towers emerges near Manila to find radioactivity far above the lethal level. Shortly after, radio silence enshrouds the entire northern hemisphere except for one transmitter near Seattle that sends out intermittent, garbled signals. The lightning war is over.

Lacking official orders, Towers has placed his vessel under Australian authority at Melbourne. His

liaison officer is a young Aussie with wife and infant daughter, at whose home he spent several days while the sub was outfitted for a survey into contaminated northern waters. His own Connecticut family has undoubtedly been wiped out along with the entire U.S., but his methodical, unimaginative mind refuses to encompass the thought.

After the initial shock from science's conclusion has faded that fallout from the world wind currents will end all life in the southern hemisphere, even though Australia was never bombed, life goes on much as it did before. The majority finds it easier to continue working rather than wait, even to conducting the hopeless reconnaissance.

Despite the enormity of his theme, Shute's characters are ordinary people and their dilemma has all the more impact for it. Even hardened veterans of countless fictional Armageddons will find this an emotional wallop. It should be made mandatory reading for all professional diplomats and politicos.

HIGH VACUUM by Charles Eric Maine. Ballantine Books, N. Y., $2.00

HAVING recently concluded an unappreciative review of Maine's mainly nonsensical science-detection *The Isotope Man,* I was unprepared for this grim, mature yarn of the first Moon flight. Maine has come of age without previous hint of maturing.

Despite the almost fanatic attention to detail that the Western Federation Astronautics Commission has devoted to the project, for some reason the *Alpha* has been moonwrecked with three survivors among the four-man crew. And also despite the indoctrination of the crew on the prime hazard of the spaceman, vacuum, the ship has pancaked into a lethally radioactive crater.

The engineer is killed in the crash and the doctor-navigator crippled by a compound fracture of the leg. Caird, the commander, and Patterson, electronics, are physically fit, but they must establish a base outside the crater for survival, even though it means living within spacesuits. Only short intervals for eating and other functions to be performed in the oxygenated but contaminated ship can be chanced. Also, the crippled doctor must be carried back and forth from base to ship.

The cause of the crash is an unconscious girl stowaway, fiancée of the dead man; her added weight overbalanced the fuel safety factor.

Patterson is for eliminating her without compunction, since the oxygen will only last a couple of weeks for all and six weeks must elapse before help arrives.

All this makes for a melodra-

matic situation, but Maine plays it straight and pulls no jokers, or punches either, for that matter.

Recommended.

THE MAKING OF A MOON by Arthur C. Clarke. Harper & Brothers, N. Y., $3.50

CLARKE has lifted his head from the sea bottom long enough to give us this breezy account of how we stand at present with regard to the space satellite. Not only that—he has gone into its pre-history and the technical developments in rocketry leading up to the satellite itself.

Although one would think that there cannot possibly be anything new to add to all that has been written since the President's announcement of the IGY, no one has yet penned *the* definitive book. Also, advances are being made so rapidly that a book is obsolescent before it is printed. Nevertheless, Clarke's comes closest to being the ideal popularization.

One thing he has succeeded in doing with hardly any exertion is destroying the myth of the space station's invulnerability. The only requirement is Napoleon's famous "whiff of grapeshot," shrapnel, which would eventually perforate the station like Swiss cheese, whether the initial shot hit or missed. After all, meeting the shrapnel head-on every hour and a half is bound to make the station a sitting duck with expenditure of just one shot.

Comforting thought, with Russia's satellites overhead.

MAN INTO SPACE by Hermann Oberth. Harper & Brothers, N. Y., $4.50

PERHAPS nobody is better qualified to jump on the "space" bandwagon than Oberth — to compound a metaphor, he wrote the original music. In 1923, he published his first book, *By Rocket into Planetary Space*, an extraordinary volume which is still technically valid. During and after the war years, the legendary Oberth was lost to view, but he has recently been brought to this country by a former protegé, Werner von Braun.

Unlike Clarke, Oberth's sole concern is Man in Space. Before reading this book, I was quite convinced that I was briefed on every aspect of the conquest of space in the immediately foreseeable future. However, Oberth's imagination is fully as fertile as it was in 1923.

His visualization of the spacesuit as shaped by technological requirements is enough to make a gibberer of any Hollywood prop man, as would his space station built between two rockets rotating around a common center at opposite ends of an 8600-yard steel cable. As for his electric spaceships and his one-legged jumping Moon

car—shades of Tom Swift!

Herr Oberth, however, is stone-cold sober and he has added a mathematical appendix for skeptics who find his concepts on the wild side.

Oberth's book is a good deal more exciting and provocative than some of today's SF novels.

A PORTFOLIO by Frank Kelly Freas. Advent: Publishers, Chicago, $1.50

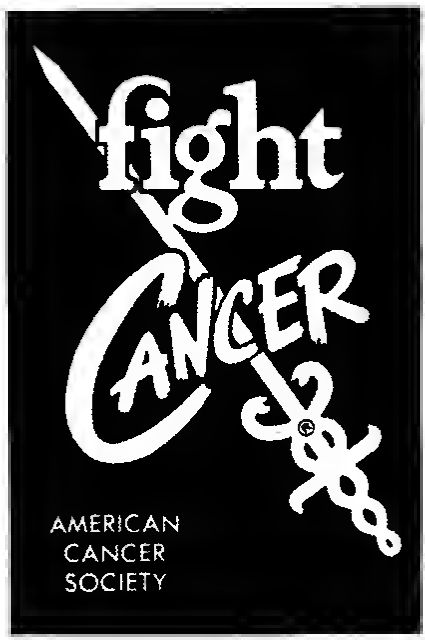
SIXTEEN drawings from several SF mags, eminently suited for framing and easily unstapled for the purpose. Figures out to less than a dime each. Direct from the publisher, 3508 N. Sheffield.

TWO SOUGHT ADVENTURE by Fritz Leiber. Gnome Press, N. Y., $3.00

FOR those readers whose memories span two decades, these yarns are guaranteed nostalgia evokers. They are the improbably wonderful adventures of Fafhrd and the Gray Mouser, Leiber's barbarian northerner and urban dandy of another world and time. The first five tales are from *Unknown* and the final two of more recent vintage.

Fans of Howard-de Camp-Nyberg's Conan will find Fafhrd-Gray Mouser at least his equal in dering-do.

—FLOYD C. GALE



(Continued from page 4)

the end of the semester and they've finished their tour of duty by then. However, **THEY** can always be detected by the answers they give to three questions." Mr. Cogswell wants me to pass them on to other profs and instructors:

Q. Should the franchise be extended to 18-year-olds?

A. Yes. If they are old enough to fight, they're old enough to vote.

Q. Should women be drafted in case of war?

A. No. A woman's place is in the home.

Q. Should college football be abolished?

A. No. Football builds character.

Evidently the universities are getting special attention; here is a mimeographed publicity release someone received: "Recently a Midwestern college professor stepped before his senior class in modern languages, took a deep breath and said:

"'Crashes! Water larder warts sunned lack itch udder! Effervescent further deferent saturations an witch way harem, wade heifer haliver tam sang witch worse witch.'

"Not only did the class agree, but" . . .

The rest gets incomprehensible.

In the glimpses of garishly advanced science, there is no comfort whatever. *The Congressional Record,* reporting registration of lobbyists as required by law, lists "Oliver Francis White, 418 Third Street, Stambaugh, Mich. (Legislative interests) Against any legislation legalizing developed 'Thought and Nerve Impulse Transmitters,' which are also Telecremators and Teleportage devices. Lobby for an open committee investigation of the organization working the above mentioned devices. (Anticipated expenditures) Printing and Postage, $75 per quarter."

Theodore Sturgeon asks: "Have you noticed how perforated paper —address labels, stamps, paper towels, etc. — tears elsewhere than on the perforations?"

Eventually, he says, we'll have a paper "of infinite strength composed of nothing at all." Will we? Or is the idea to make us ruin paper?

Bell Lab produced the Ultimate Machine — a box with one button. Push button, motor hums, lid lifts, hand comes out, pushes button, goes back, lid closes, motor stops. Doesn't Bell know that gadget could be used to make every machine on Earth shut itself off—at the right moment?

H. W. wrote the Hagerstown *Daily Mail*: "Can a woman without a navel have children?" Dr. Van Dellen replied: "Yes. Now I have a question: How was she born?"

Not *how,* Doc. *Where.*

—H. L. GOLD

A FEAST OF DEMONS

Illustrated by DILLON

By WILLIAM MORRISON

I

THAT year we were all Romans, and I have to tell you that I look awful in a toga and short sword, but not nearly as awful as the Greek.

You go to one of the big schools and naturally you turn out for the Class Reunion. Why not? There's money there, and good fellowship, and money, and the chance of a business contact that will do you some good. And money.

Well, I wasn't that fortunate — and you can say that again because it's the story of my life: I wasn't that fortunate.

I didn't go to Harvard, Princeton or Yale. I didn't even go to Columbia, U.C.L.A. or the University of Chicago. What I went to was Old Ugly. Don't lie to me—you never heard of Old Ugly, not even if I tell you it's Oglethorpe A. & M. There were fifty-eight of us in my graduating class — that's 1940 — and exactly thirty turned up for the tenth reunion.

Wouldn't that turn your stomach? Only thirty Old Grads with enough loyalty and school feeling to show up for that tenth reunion and parade around in Roman togas and drink themselves silly and renew old school ties. And, out of



If you wont my opinion, old Moxwell should have kept his big mouth shut . . . ond then El Greco could not have put Eorth in o fromel

that thirty, the ones that we all really wanted to see for sentimental reasons — I refer to Feinbarger of Feinbarger Shipping, Schroop of the S.S.K. Studios in Hollywood, Dixon of the National City Bank and so on — they didn't show up at all. It was terribly disappointing to all of us, especially to me.



In fact, at the feast that evening, I found myself sitting next to El Greco. There simply wasn't anyone else there. You understand that I don't refer to that Spanish painter — I believe he's dead, as a matter of fact. I mean Theobald Greco, the one we called the Greek.

I INTRODUCED myself and he looked at me blearily through thick glasses. "Hampstead? Hampstead?"

"*Virgil* Hampstead," I reminded him. "You remember me. Old Virgie."

He said, "Sure. Any more of that stuff left in the bottle, Old Virgie?"

I poured for him. It was my impression, later borne out by evidence, that he was not accustomed to drinking.

I said, "It's sure great to see all the fellows again, isn't it? Say, look at Pudge Detweiler there! Ever see anything so comical as the lampshade he's wearing for a hat?"

"Just pass me the bottle, will you?" Greco requested. "Old Virgie, I mean."

"Still in research and that sort of thing?" I asked. "You always were a brain, Greek. I can't tell you how much I've envied you creative fellows. I'm in sales myself. Got a little territory right here that's a mint, Greek. A mint. If I only knew where I could lay my hands on a little capital to expand it the way—But I won't bore you with shop talk. What's your line these days?"

"I'm in transmutation," he said clearly, and passed out face down on the table.

Now nobody ever called me a dope—other things, yes, but not a dope.

I knew what transmutation meant. Lead into gold, tin into platinum, all that line of goodies. And accordingly the next morning, after a certain amount of Bromo and black coffee, I asked around the campus and found out that Greco had a place of his own not far from the campus. That explained why he'd turned up for the reunion. I'd been wondering.

I borrowed cab fare from Old Pudge Detweiler and headed for the address I'd been given.

It wasn't a home. It was a beat-up factory and it had a sign over the door:

T. GRECO
Plant Foods & Organic Supplies

SINCE it was Sunday, nobody seemed to be there, but I pushed open the door. It wasn't locked. I heard something from the basement, so I walked down a flight of steps and looked out into a rather smelly laboratory.

There was the Greek. Tall, thin, wide-eyed and staggering, he ap-

peared to be chasing butterflies.

I cleared my throat, but he didn't hear me. He was racing around the laboratory, gasping and muttering to himself, sweeping at empty air with what looked to me like an electric toaster on a stick. I looked again and, no, it wasn't an electric toaster, but exactly what it was defied me. It appeared to have a recording scale on the side of it, with a needle that flickered wildly.

I couldn't see what he was chasing.

The fact was that, as far as I could see, he wasn't chasing anything at all.

You have to get the picture: Here was Greco, racing around with one eye on the scale and one eye on thin air; he kept bumping into things, and every now and then he'd stop, and stare around at the gadgets on the lab benches, and maybe he'd throw a switch or turn a dial, and then he'd be off again.

He kept it up for ten minutes and, to tell you the truth, I began to wish that I'd made some better use of Pudge Detweiler's cab fare. The Greek looked as though he'd flipped, nothing less.

But there I was. So I waited.

And by and by he seemed to get whatever it was he was looking for and he stopped, breathing heavily.

I said, "Hi there, Greek."

He looked up sharply. "Oh," he said, "Old Virgie."

He slumped back against a table, trying to catch his breath.

"The little devils," he panted. "They must have thought they'd got away that time. But I fixed them!"

"Sure you did," I said. "You bet you did. Mind if I come in?"

He shrugged. Ignoring me, he put down the toaster on a stick, flipped some switches and stood up. A whining sound dwindled and disappeared; some flickering lights went out. Others remained on, but he seemed to feel that, whatever it was he was doing, it didn't require his attention now.

In his own good time, he came over and we shook hands. I said appreciatively, "Nice-looking laboratory you have here, Greek. I don't know what the stuff is for, but it looks expen—it looks very efficient."

He grunted. "It is. Both. Expensive and efficient."

I laughed. "Say," I said, "you were pretty loaded last night. Know what you told me you were doing here?"

He looked up quickly. "What?"

"You said you were in transmutation." I laughed harder than ever.

HE stared at me thoughtfully, and for a second I thought—well, I don't know what I thought,

but I was worried. He had a lot of funny-looking things there, and his hand was stretching out toward one of them.

But then he said, "Old Virgie."

"That's me," I said eagerly.

"I owe you an apology," he went on.

"You do?"

He nodded. "I'd forgotten," he confessed, ashamed. "I didn't remember until just this minute that you were the one I talked to in my senior year. My only confidant. And you've kept my secret all this time."

I coughed. "It was nothing," I said largely. "Don't give it a thought."

He nodded in appreciation. "That's just like you," he reminisced. "Ten years, eh? And you haven't breathed a word, have you?"

"Not a word," I assured him. And it was no more than the truth. I hadn't said a word to anybody. I hadn't even said a word to myself. The fact of the matter was, I had completely forgotten what he was talking about. Kept his secret? I didn't even *remember* his secret. And it was driving me nuts!

"I was sure of you," he said, suddenly thawing. "I knew I could trust you. I must have — otherwise I certainly wouldn't have told you, would I?"

I smiled modestly. But inside I was fiercely cudgeling my brain.

He said suddenly, "All right, Virgie. You're entitled to something for having kept faith. I tell you what I'll do—I'll let you in on what I'm doing here."

All at once, the little muscles at the back of my neck began to tense up.

He would do *what?* "Let me in" on something? It was an unpleasantly familiar phrase. I had used it myself all too often.

"To begin with," said the Greek, focusing attentively on me, "you wonder, perhaps, what I was doing when you came in."

"I do," I said.

He hesitated. "Certain — particles, which are of importance to my research, have a tendency to go free. I can keep them under a measure of control only by means of electrostatic forces, generated in this." He waved the thing that looked like a toaster on a stick. "And as for what they do — well, watch."

EL Greco began to putter with gleamy, glassy gadgets on one of the tables and I watched him with, I admit, a certain amount of suspicion.

"What are you doing, Greek?" I asked pretty bluntly.

He looked up. Surprisingly, I saw that the suspicion was mutual; he frowned and hesitated. Then he shook his head.

"No," he said. "For a minute I — but I can trust you, can't I? The man who kept my secret for ten long years."

"Of course," I said.

"All right." He poured water out of a beaker into a U-shaped tube, open at both ends. "Watch," he said. "Remember any of your college physics?"

"The way things go, I haven't had much time to keep up with—"

"All the better, all the better," he said. "Then you won't be able to steal anything."

I caught my breath. "Now *listen*—"

"No offense, Virgie," he said earnestly. "But this is a billion dollars and — No matter. When it comes right down to cases, you could know as much as all those fool professors of ours put together and it still wouldn't help you steal a thing."

He bobbed his head, smiled absently and went back to his gleamy gadgets. I tell you, I *steamed*. That settled it, as far as I was concerned. There was simply no excuse for such unjustified insults to my character. I certainly had no intention of attempting to take any unfair advantage, but if he was going to act that way . . .

He was asking for it. Actually and literally asking for it.

He rapped sharply on the U-tube with a glass stirring rod, seeking my attention.

"I'm watching," I told him, very amiable now that he'd made up my mind for me.

"Good. Now," he said, "you know what I do here in the plant?"

"Why — you make fertilizer. It says so on the sign."

"Ha! No," he said. "That is a blind. What I do is, I separate optical isomers."

"That's very nice," I said warmly. "I'm glad to hear it, Greek."

"Shut up," he retorted unexpectedly. "You don't have the foggiest notion of what an optical isomer is and you know it. But try and think. This isn't physics; it's organic chemistry. There are compounds that exist in two forms—apparently identical in all respects, except that one is the mirror image of the other. Like right-hand and left-hand gloves; one is the other, turned backwards. You understand so far?"

"Of course," I said.

HE looked at me thoughtfully, then shrugged. "No matter. They're called d- and l-isomers — d for dextro, l for levo; right and left, you see. And although they're identical except for being mirror-reversed, it so happens that sometimes one isomer is worth much more than the other."

"I see that," I said.

"I thought you would. Well, they can be separated—but it's expensive. Not my way, though.

My way is quick and simple. I use demons."

"Oh, now, Greek. *Really.*"

He said in a weary tone, "Don't talk, Virgie. Just listen. It won't tire you so much. But bear in mind that this is simply the most trifling application of my discovery. I could use it for separating U-235 from U-238 just as easily. In fact, I already—" He stopped in mid-sentence, cocked his head, looked at me and backtracked. "Never mind that. But you know what a Maxwell demon is?"

"No."

"Good for you, Virgie. Good for you!" he applauded. "I knew I'd get the truth out of you if I waited long enough." *Another* ambiguous remark, I thought to myself. "But you surely know the second law of thermodynamics."

"Surely."

"I thought you'd say that," he said gravely. "So then you know that if you put an ice cube in a glass of warm water, for instance, the ice melts, the water cools, and you get a glass with no ice but with all the water lowered in temperature. Right? And it's a one-way process. That is, you can't start with a glass of cool water and, hocus-pocus, get it to separate into warm water and ice cube, right?"

"Naturally," I said, "for heaven's sake. I mean that's silly."

"*Very* silly," he agreed. "You know it yourself, eh? So watch."

He didn't say hocus-pocus. But he did adjust something on one of his gadgets.

There was a faint whine and a gurgling, spluttering sound, like fat sparks climbing between spreading electrodes in a Frankenstein movie.

The water began to steam faintly.

But only at one end! That end was steam; the other was — was —

It was ice. A thin skin formed rapidly, grew thicker; the other open end of the U-tube began to bubble violently. Ice at one end, steam at the other.

Silly?

But I was seeing it!

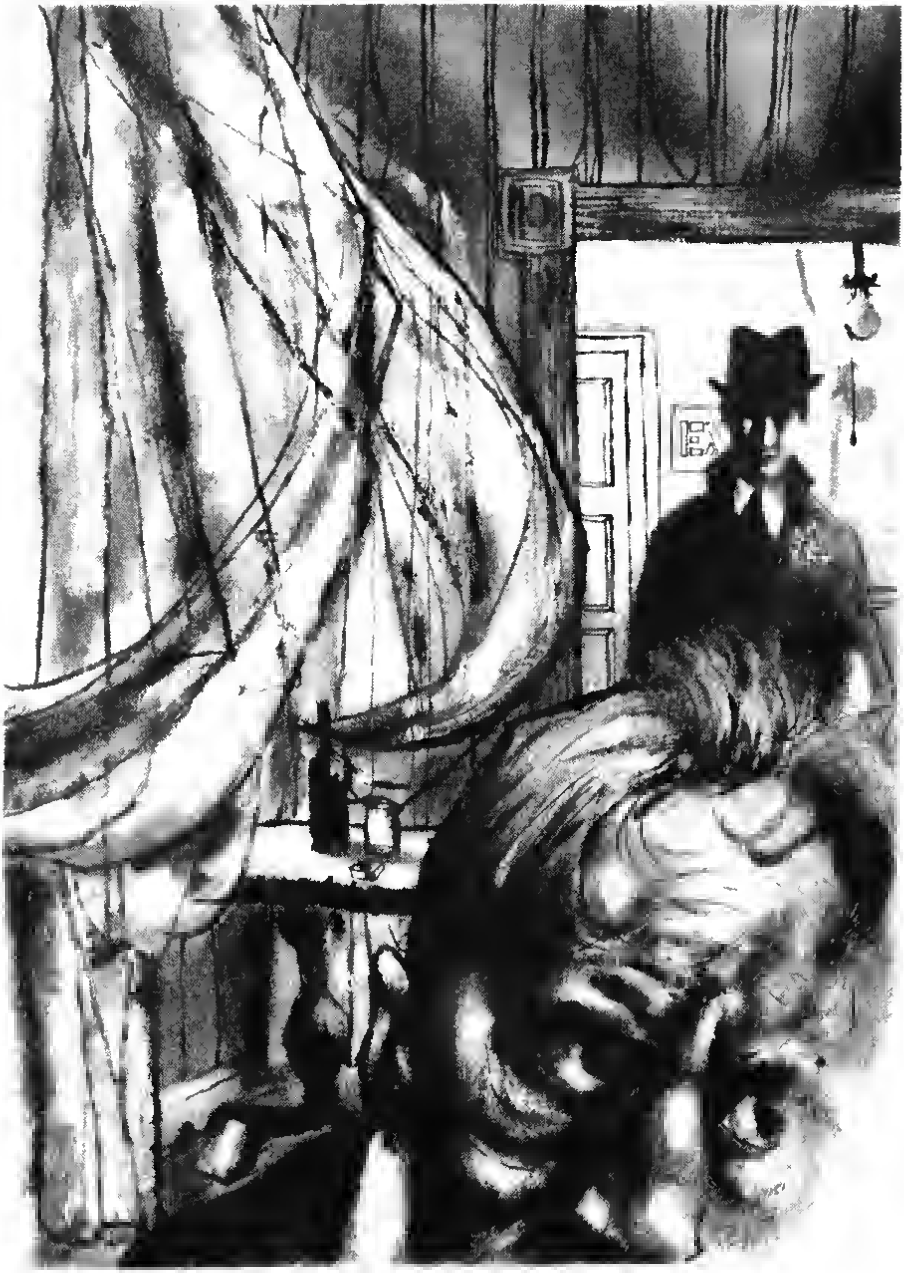
I must say, however, that at the time I didn't really know that that was all I saw.

THE reason for this is that Pudge Detweiler came groaning down the steps to the laboratory just then.

"Ah, Greek," he wheezed. "Ah, Virgie. I wanted to talk to you before I left." He came into the room and, panting, eased himself into a chair, a tired hippopotamus with a hangover.

"What did you want to talk to me about?" Greco demanded.

"You?" Pudge's glance wandered around the room; it was a look of amused distaste, the look of a grown man observing the smudgy mud play of children. "Oh,



not you, Greek. I wanted to talk to Virgie. That sales territory you mentioned, Virgie. I've been thinking. I don't know if you're aware of it, but when my father passed away last winter, he left me—well, with certain responsibilities. And it occurred to me that you might be willing to let me invest some of the—"

I didn't even let him finish. I had him out of there so fast, we didn't even have a chance to say good-by to Greco. And all that stuff about demons and hot-and-cold water and so on, it all went out of my head as though it had never been. Old Pudge Detweiler! How was *I* to know that his father had left him thirty thousand dollars in one attractive lump of cash!

II

WELL, there were business reverses. Due to the reverses, I was forced to miss the next few reunions. But I had a lot of time to think and study, in between times at the farm and the shop where we stamped out license plates for the state.

When I got out, I began looking for El Greco.

I spent six months at it, and I didn't have any luck at all. El Greco had moved his laboratory and left no forwarding address.

But I wanted to find him. I wanted it so badly, I could taste it, because I had begun to have some idea of what he was talking about, and so I kept on looking.

I never did find him, though. He found me.

He came walking in on me in a shabby little hotel room, and I hardly recognized him, he looked so prosperous and healthy.

"You're looking just great, Greek," I said enthusiastically, seeing it was true. The years hadn't added a pound or a wrinkle—just the reverse, in fact.

"You're not looking so bad yourself," he said, and gazed at me sharply. "Especially for a man not long out of prison."

"Oh." I cleared my throat. "You know about that."

"I heard that Pudge Detweiler prosecuted."

"I see." I got up and began uncluttering a chair. "Well," I said, "it's certainly good to — How did you find me?"

"Detectives. Money buys a lot of help. I've got a lot of money."

"Oh." I cleared my throat again.

Greco looked at me, nodding thoughtfully to himself. There was one good thing; maybe he knew about my trouble with Pudge, but he also had gone out of his way to find me. So *he* wanted something out of *me*.

He said suddenly, "Virgie, you were a damned fool."

"I was," I admitted honestly. "Worse than you know. But I am no longer. Greek, old boy, all this stuff you told me about those demons got me interested. I had plenty of time for reading in prison. You won't find me as ignorant as I was the last time we talked."

He laughed sourly. "That's a hot one. Four years of college leave you as ignorant as the day you went in, but a couple years of jail make you an educated man."

"Also a reformed one."

He said mildly, "Not too reformed, I hope."

"Crime doesn't pay — except when it's within the law. That's the chief thing I learned."

"Even then it doesn't pay," he said moodily. "Except in money, of course. But what's the use of money?"

THERE wasn't anything to say to *that*. I said, probing delicately, "I figured you were loaded. If you can use your demons to separate U-235 from U-238, you can use them for separating gold from sea water. You can use them for damn near anything."

"Damn near," he concurred. "Virgie, you may be of some help to me. Obviously you've been reading up on Maxwell."

"Obviously."

It was the simple truth. I had got a lot of use out of the prison library—even to the point of learning all there was to learn about Clerk Maxwell, one of the greatest of physicists, and his little demons. I had rehearsed it thoroughly for El Greco.

"Suppose," I said, "that you had a little compartment inside a pipe of flowing gas or liquid. That's what Maxwell said. Suppose the compartment had a little door that allowed molecules to enter or leave. You station a demon—that's what Maxie called them himself—at the door. The demon sees a hot molecule coming, he opens the door. He sees a cold one, he closes it. By and by, just like that, all the hot molecules are on one side of the door, all the cold ones — the slow ones, that is — on the other. Steam on one side, ice on the other, that's what it comes down to."

"That was what you saw with your own eyes," Theobald Greco reminded me.

"I admit it," I said. "And I admit I didn't understand. But I do now."

I understood plenty. Separate isotopes — separate elements, for that matter. Let your demon open the door to platinum, close it to lead. He could make you rich in no time.

He had, in fact, done just that for Greco.

GRECO said, "Here. First installment." He pulled something out of his pocket and handed

it to me. It was metallic — about the size of a penny slot-machine bar of chocolate, if you remember back that far. It gleamed and it glittered. And it was ruddy yellow in color.

"What's that?" I asked.

"Gold," he said. "Keep it, Virgie. It came out of sea water, like you said. Call it the down payment on your salary."

I hefted it. I bit it. I said, "By the way, speaking of salary . . ."

"Whatever you like," he said wearily. "A million dollars a year? Why not?"

"Why not?" I echoed, a little dazed.

And then I just sat there listening, while he talked. What else was there to do? I won't even say that I was listening, at least not with the very fullest of attention, because that thought of a million dollars a year kept coming between me and his words. But I got the picture. The possibilities were endless. And how well I knew it!

Gold from the sea, sure. But energy—free energy—it was there for the taking. From the molecules of the air, for instance. Refrigerators could be cooled, boilers could get up steam, homes could be heated, forges could be fired — and all without fuel. Planes could fly through the air without a drop of gasoline in their tanks. Anything.

A million dollars a year . . .

And it was only the beginning.

I came to. "What?"

He was looking at me. He repeated patiently, "The police are looking for me."

I stared. "You?"

"Did you hear about Grand Rapids?"

I thought. "Oh — Wait. A fire. A big one. And that was you?"

"Not me. My demons. Maxwell demons—or Greco demons, they should be called. He talked about them; I use them. When they're not using me. This time, they burned down half the city."

"I remember now," I said. The papers had been full of it.

"They got loose," he said grimly. "But that's not the worst. You'll have to earn your million a year, Virgie."

"What do you mean, they got loose?"

He shrugged. "Controls aren't perfect. Sometimes the demons escape. I can't help it."

"How do you control them in the first place?"

He sighed. "It isn't really what you would call controls," he said. "It's just the best I can do to keep them from spreading."

"But — you said sometimes you separate metals, sometimes you get energy. How do the demons know which you want them to do, if you say you can't control them?

"How do you make an apple tree understand whether you want

it to grow Baldwins or Macintoshes?"

I GAWKED at him. "Why — but you don't, Greek! I mean it's either one or the other!"

"Just so with demons! You're not so stupid after all, are you? It's like improving the breed of dogs. You take a common ancestral mutt, and generations later you can develop an Airedale, a dachshund or a Spitz. How? By selection. My demon entities grow, they split, the new entities adapt themselves to new conditions. There's a process of evolution. I help it along, that's all."

He took the little slab of gold from me, brooding.

Abruptly he hurled it at the wall. "Gold!" he cried wildly. "But who wants it? I need *help*, Virgie! If gold will buy it from you, I'll pay! But I'm desperate. You'd be desperate too, with nothing ahead but a sordid, demeaning death from young age and a—"

I interrupted him. "What's that?"

It was a nearby raucous hooting, loud and mournful.

Greco stopped in mid-sentence, listening like a hunted creature. "My room," he whispered. "All my equipment—on the floor above—"

I stepped back, a little worried. He was a strange man, skinny and tall and wild-eyed. I was glad he was so thin; if he'd been built solidly in proportion to his height, just then he would have worried me, with those staring, frightened eyes and that crazy way of talking. But I didn't have time to worry, in any case. Footsteps were thundering in the halls. Distant voices shouted to each other.

The hoot came again.

"The fire whistle!" Greco bayed. "The hotel's on fire!"

He leaped out of my room into the corridor.

I followed. There was a smell of burning — not autumn leaves or paper; it was a chemical-burning smell, a leather-burning smell, a henyard-on-fire smell. It reeked of an assortment of things, gunpowder and charred feathers, the choking soot of burning oil, the crisp tang of a wood fire. It was, I thought for a second, perhaps the typical smell of a hotel on fire, but in that I was wrong.

"Demons!" yelled Greco, and a bellhop, hurrying by, paused to look at us queerly. Greco sped for the stairs and up them.

I followed.

It was Greco's room that was ablaze — he made that clear, trying to get into it. But he couldn't. Black smoke billowed out of it, and orange flame. The night manager's water bucket was going to make no headway against *that*.

I retreated. But Greco plunged ahead, his face white and scary.

I stopped at the head of the

stairs. The flames drove Greco off, but he tried again. They drove him off again, and this time for good.

He stumbled toward me. "Out! It's hopeless!" He turned, stared blindly at the hotel employees with their chain of buckets. "You! What do you think you're doing? That's—" He stopped, wetting his lips. "That's a gasoline fire," he lied, "and there's dynamite in my luggage. Clear the hotel, you hear me?"

It was, as I say, a lie. But it got the hotel cleared out.

And then—

It might as well have been gasoline and dynamite. There was a purplish flash and a muttering boom, and the whole roof of the four-story building lifted off.

I caught his arm.

"Let's get out of here," I said.

He looked at me blindly. I'd swear he didn't know me. His eyes were tortured.

"Too late!" he croaked. "Too late! They're free again!"

III

SO I went to work for Theobald Greco — in his laboratory in Southern California, where we replaced some of the things that had been destroyed.

And one morning I woke up and found my hair was white.

I cried, "Greek!"

Minnie came running in. I don't believe I told you about Minnie. She was Greco's idea of the perfect laboratory assistant — stupid, old, worthless to the world and without visible kin. She came in and stared and set up a cackling that would wake the dead.

"Mister Hampstead!" she chortled. "My, but ain't you a sight!"

"Where's Greco?" I demanded, and pushed her out of my way.

In pajamas and bathrobe, I stalked down the stairs and into the room that had once been a kitchen and now was Greco's laboratory.

"Look!" I yelled. "What about *this?*"

He turned to look at me.

After a long moment, he shook his head.

"I was afraid of that," he mumbled. "You were a towhead as a kid, weren't you? And now you're a towhead again."

"But my hair, Greek! It's turned *white*."

"Not white," he corrected despondently. "Yellow. It's reverted to youth—overnight, the way it happens sometimes. I warned you, Virgie. I told you there were dangers. Now you know. Because—"

He hesitated, looked at me, then looked away.

"Because," he said, "you're getting younger, just like me. If we don't get this thing straightened out, you're going to die of young age yourself."

I stared at him. "You said that before, about yourself. I thought you'd just tongue-twisted. But you really mean—"

"Sit down," he ordered. "Virgie, I told you that you were looking younger. It wasn't just looks. It's the demons—and not just you and me, but a lot of people. First Grand Rapids. Then when the hotel burned. Plenty have been exposed —you more than most, I guess, ever since the day you walked into my lab and I was trying to recapture some that had got away. Well, I don't guess I recaptured them all."

"You mean *I*—"

He nodded. "Some of the demons make people younger. And you've got a colony of them in you."

I SWALLOWED and sat down. "You mean I'm going to get younger and younger, until finally I become a baby? And then — what then, Greek?"

He shrugged. "How do I know? Ask me in another ten years. *Look at me, Virgie!*" he cried, suddenly loud. "How old do I look to you? Eighteen? Twenty?"

It was the plain truth. He looked no more than that. Seeing him day by day, I wasn't conscious of change; remembering him from when we had gone to school, I thought of him as younger anyway. But he was forty, at the very least, and he didn't look old enough to vote.

He said, "I've had demons inside of me for six years. It seems they're a bit choosy about where they'll live. They don't inhabit the whole body, just parts of it—heart, lungs, liver. Maybe bones. Maybe some of the glands — perhaps that's why I feel so chipper physically. But not my brain, or not yet. Fortunately."

"Fortunately? But that's wrong, Greek! If your brain grew younger too—"

"Fool! If I had a young brain, I'd forget everything I learned, like unrolling a tape backwards! That's the danger, Virgie, the immediate danger that's pressing me —that's why I needed help! Because if I ever forget, that's the end. Not just for me — for everybody; because there's no one else in the world who knows how to control these things at all. Except me — and you, if I can train you."

"They're loose?" I felt my hair wonderingly. Still, it was not exactly a surprise. "How many?"

He shrugged. "I have no idea. When they let the first batch of rabbits loose in Australia, did they have any idea how many there would be a couple of dozen generations later?"

I whistled. Minnie popped her head in the door and giggled. I waved her away.

"She could use some of your

demons," I remarked. "Sometimes I think she has awfully young ideas, for a woman who's sixty if she's a day."

Greco laughed crazily. "Minnie? She's been working for me for a year. And she was eighty-five when I hired her!"

"I can't believe you!"

"Then you'll have to start practicing right now," he said.

It was tough, and no fooling; but I became convinced. It wasn't the million dollars a year any more.

It was the thought of ending my days as a drooling, mewling infant—or worse! To avert that, I was willing to work my brain to a shred.

FIRST it was a matter of learning — learning about the "strange particles." Ever hear of them? That's not my term—that's what the physicists call them. Positrons. The neutrino. Pions and muons, plus and minus; the lambda and the antilambda. K particles, positive and negative, and anti-protons and anti-neutrons and sigmas, positive, negative and neutral, and —

Well, that's enough; but physics had come a long way since the classes I cut at Old Ugly, and there was a lot to catch up on.

The thing was, some of the "strange particles" were stranger than even most physicists knew. Some — in combination — were in fact Greco's demons.

We bought animals — mice, rabbits, guinea pigs, even dogs. We infected the young with some of our own demons — that was simple enough, frighteningly simple; all we had to do was handle them a bit. And we watched what happened.

They died — of young age.

Some vital organ or another regressed to embryonic condition, and they died — as Greco and I would die, if we didn't find the answer. As the whole world might die. Was it better than reverting past the embryo to the simple lifeless zygote? I couldn't decide. It was dying, all the same. When an embryonic heart or liver is called on to do a job for a mature organism, there is only one way out. Death.

And after death — the demons went on; the dog we fed on the remains of the guinea pigs followed them to extinction in a matter of weeks.

Minnie was an interesting case.

She was going about her work with more energy every day, and I'll be blasted if I didn't catch her casting a lingering Marilyn Monroe sort of look at me when Greco's back was turned.

"Shall we fire her?" I asked El Greco when I told him about it.

"What for?"

"She's disrupting the work!"



"The work isn't worth a damn anyhow," he said moodily. "We're not getting anywhere, Virgie. If it was only a matter of smooth, predictable rates — But look at her. She's picking up speed! She's dropped five years in the past couple weeks."

"She can stand to drop a lot more," I said, annoyed.

HE shrugged. "It depends on where. Her nose? It's shortened to about a fifteen-year-old level now. Facial hair? That's mostly gone. Skin texture? Well, I suppose there's no such thing as a too-immature skin, I mean short of the embryonic capsule, but — Wait a minute."

He was staring at the doorway.

Minnie was standing there, simpering.

"Come here!" he ordered in a voice like thunder. "Come here, you! Virgie, look at her nose!"

I looked. "Ugh," I said, but more or less under my breath.

"No, no!" cried Greco. "Virgie, don't you see her nose?" Foolish; of course I did. It was long, beaked —

Then I saw.

"It's growing longer," I whispered.

"Right, my boy! Right! One curve at least has reversed itself. Do you see, Virgie?"

I nodded. "She's — she's beginning to age again."

"Better than that!" he crowed. "It's faster than normal aging, Virgie! *There are aging demons loose too!*"

A breath of hope!

But hope died. Sure, he was right — as far as it went.

There *were* aging demons. We isolated them in some of our experimental animals. First we had to lure Minnie into standing still while Greco, swearing horribly, took a tissue sample; she didn't like that, but a hundred-dollar bonus converted her. Solid CO_2 froze the skin; *snip*, and a tiny flake of flesh came out of her nose at the point of Greco's scalpel; he put the sample of flesh through a few tricks and, at the end of the day, we tried it on some of our mice.

They died.

Well, it was gratifying, in a way — they died of old age. But die they did. It took three days to show an effect, but when it came, it was dramatic. These were young adult mice, in the full flush of their mousehood, but when these new demons got to work on them, they suddenly developed a frowsy, decrepit appearance that made them look like Bowery bums over whom Cinderella's good fairy had waved her wand in reverse. And two days later they were dead.

"I think we've got something," said Greco thoughtfully; but I didn't think so, and I was right.

Dead was dead. We could kill the animals by making them too young. We could kill the animals by making them too old. But keep them alive, once the demons were in them, we could not.

Greco evolved a plan: Mix the two breeds of demons! Take an animal with the young-age demons already in it, then add a batch that worked in the other direction!

FOR a while, it seemed to work —but only for a while. After a couple of weeks, one breed or the other would gain the upper hand. And the animals died.

It was fast in mice, slow in humans. Minnie stayed alive. But the nose grew longer and facial hair reappeared; simultaneously her complexion cleared, her posture straightened.

And then, for the first time, we began to read the papers.

STRANGE PLAGUE
STRIKES ELGIN

bawled the Chicago *Tribune,* and went on to tell how the suburbs around Elgin, Illinois, were heavily infested with a curious new malady, the symptoms of which were — youth.

OAKLAND "BABY-SKIN"
TOLL PASSES 10,000

blared the San Francisco *Examiner.* The New York *News* found thousands of cases in Brooklyn. A whole hospital in Dallas was evacuated to make room for victims of the new plague.

And more.

We looked at each other.

"They're out in force," said Theobald Greco soberly. "And we don't have the cure."

IV

THE world was topsy-turvy, and in the middle of it Minnie disappeared, talking hysterically about reporting us to the authorities. I don't mind admitting that I was worried.

And the experiments were not progressing. The trouble seemed to be that the two varieties of demons — the aging and the youthing — were not compatible; if one took up residence in a given section of an organism, the other moved out. The more numerous destroyed the weaker; there was no balance. We tested it again and again in the mice and there was no doubt of it.

So far, only the youthing demons were free. But when Minnie left us, it was only a matter of time. Our carriers — from Grand Rapids and from the hotel — had spread to California and the East Coast, to the North and to the South, throughout the country, perhaps by now through the world.

It would be slower with the aging demons—there was only one of Minnie — but it would be equally sure.

Greco began drinking heavily.

"It's the end," he brooded. "We're licked."

"No, Greek! We can't give up!"

"We *have* to give up. The demons are loose in the Earth, Virgie! Those people in the headlines — they'll die of young age. So will others — even plants and animals, and bacteria, as the demons adapt to them. And then — why not? The air. The rocks, the ocean, even the Earth itself. Remember, the entropy of the Universe is supposed to tend to a maximum not only as a whole, but in each of its parts taken in isolation. The Earth's evolution — reversed. Spottily, and maybe that's worse, because some parts will evolve forward and others reverse, as is happening in my own body. Heaven help the world, Old Virgie! And not just the Earth, because what can stop them from spreading? To the Moon, the other planets—out of the Solar System, for that matter; to the other galaxies, even. Why not? And then—"

"GRECO."

An enormous tinny voice, more than human, filled the air. It came from outside.

I jumped a foot. It sounded like the voice of a demon; then I got a grip on myself and understood. It was a loudspeaker, and it came from outside.

"GRECO. WE KNOW YOU'RE IN THERE. COME ON OUT!"

I had a stabbing sensation of familiarity. "The police!" I cried. "Greco, it's the police!"

He looked at me wearily and shook his head.

"No. More likely the F.B.I."

WELL, that was it. I got out—I didn't wait for permission from the Greek.

I stopped at the door, and three searchlight beams hit me right in the eye. There were cars all around the laboratory, but I couldn't see them, not after those lights went on.

I froze, stiff; wanting to make sure they understood (a) that I wasn't Greco and (b) that I didn't have a gun.

They understood, all right.

But they let me out.

They put me in one of the cars, with a slim gray-eyed young man in a snap-brimmed hat sitting politely and alertly beside me, and they let me watch; and what happened after that wasn't funny at all.

Greco didn't come out. They shouted at him over the loudspeaker and eventually he answered — his voice little and calm, coming out of nowhere, and all he said was, "Go away. I won't come

out. I warn you, don't try to force your way in."

But he knew they wouldn't listen, of course.

They didn't.

They tried force.

And he met it in novel ways with force of his own. The door had locked itself behind me; they got a fence post for a battering ram, and the post burst into flame. They found an L-beam from an old bed frame and tried that, and they were sorry they had done it; the thing melted in the middle, splattering them with hot drops of steel.

The polite, alert young man beside me said, not so polite any more, "What's he doing, you? What sort of fancy tricks has he got in there?"

"Demons," I said crazily, and *that* was a mistake, but what else was I to do? Try to explain Maxwell's equations to a Fed?

They were trying again — there were fifteen or twenty of them, at least. They went for the windows, and the windows dissolved and rained cherry-red wet glass on them. They tried again through the open frames when the glass was gone, and the frames burst into fire around them, the blue smoke bleached white in the yellow of the flame and the white of the searchlights. They tried singly, by stealth; and they tried in clusters of a dozen, yelling.

IT was hopeless — hopeless for everybody, because they couldn't get in and the Greek could never, never get out; for go away they wouldn't. Not even when, with *poof* and a yellow flare, the gas tank of one of the cars exploded. All that happened was that the man in the snap-brimmed hat and I leaped out, real quick; and then all the cars went up. But the men didn't leave. And then the guns began to go off without waiting for anyone to pull the trigger; and the barrels softened and slumped and spattered to the ground. But the men still had bare hands, and they stayed.

The Greek got wild — or lost control, it was hard to tell which. There was a sudden catastrophic *whooshing* roar and, *wham*, a tree took flame for roots. A giant old oak, fifty feet tall, I guess it had been there a couple of centuries, but Greco's demons changed all that; it took flame and shot whistling into the air, spouting flame and spark like a Roman candle. Maybe he thought it would scare them. Maybe it did. But it also made them mad. And they ran, all at once, every one of them but my personal friend, for the biggest, openest of the windows —

And leaped back, cursing and yelling, beating out flames on their clothes.

Jets of flame leaped out of every window and door. The old

building seemed to bulge outward and go *voom*. In half a second, it was a single leaping tulip of fire.

The firemen got there then, but it was a little late. Oh, they got Greco out — alive, even. But they didn't save a bit of the laboratory. It was the third fire in Greco's career, and the most dangerous — for where previously only a few of the youthing demons had escaped, now there were vast quantities of both sorts.

It was the end of the world.

I knew it.

YOU know, I wish I had been right. I spent yesterday with Greco. He's married now and has a fine young son. They made an attractive family picture, the two healthy-looking adults, strong-featured, in the prime of life, and the wee toddler between them.

The only thing is — Greco's the toddler.

He doesn't call himself Greco any more. Would you, the way the world is now? He has plenty of money stashed away — I do too, of course — not that money means very much these days. His brain hasn't been affected, just his body. He was lucky, I guess. Some of the demons hit the brain in some of their victims and —

Well, it's pretty bad.

Greco got the answer after a while. Both types of demons were loose in the world, and both, by and by, were in every individual.

But they didn't kill each other off.

One simply grew more rapidly, took over control, until it ran out of the kind of molecules it needed. Then the other took over.

Then the first.

Then the other again . . .

Mice are short-lived. It's like balancing a needle on the end of your nose; there isn't enough space in a mouse's short span for balance, any more than there is in a needle's.

But in a human life —

Things are going to have to be worked out, though.

It's bad enough that a family gets all mixed up the way Greco's is — he's on a descending curve, his kid is on an aging curve, and Minnie — did I tell you that it was Minnie he married? — has completed her second rejuvenation and is on the way back up again.

But there are worse problems that that.

For one thing, it isn't going to be too long before we run out of space. I don't mean time, I mean space. *Living* space.

Because it's all very well that the human animal should now mature to grow alternately younger and older, over and over —

But, damn it, how I wish that somebody once in a while would *die!*

— **WILLIAM MORRISON**



Yes—$1.00 Brings You Any 3 of These Great Books WITH MEMBERSHIP

Volues Up to $12.85 in Publishers' Editions!

Eoch Book Packed from Cover to Cover with thrills of Top-Flight Science-Fiction . . . ond Science FACT!

THE ASTOUNDING SCIENCE-FICTION ANTHOLOGY. A story about the first A-Bomb . . . written before it was invented! Plus a score of other best tales from a dozen years of Astounding Science-Fiction Magazine. (Pub. ed. $3.50)

THE BEST FROM FANTASY AND SCIENCE-FICTION. (New edition) 17 thrilling stories selected from *Fantasy and Science-Fiction Magazine*. Adventure in other worlds . . . mystery, intrigue, suspense! (Pub. ed. $3.50)

TREASURY OF SCIENCE-FICTION CLASSICS. 4 famous novels; a complete play, scores of all-time great S-F stories, including H. G. Wells' "Invasion from Mars," made famous by Orson Welles' hoax newscast. (Pub. ed. $2.95)

• • •

NOW—THE BEST NEW SCIENCE-FICTION BOOKS FOR ONLY $1.00 EACH!

IMAGINE — ANY 3 of these full-size, brand-new science-fiction books—yours for just $1! Crammed with thrills . . . written by top-notch science-fiction authors. An $8.85 to $12.85 value, complete in handsome, permanent bindings. Each month the SCIENCE-FICTION BOOK CLUB brings you the finest brand-new full-length books FOR ONLY $1 EACH (plus a few cents shipping charges) — even though they cost $2.50, $3.50 and up in publishers' editions! You take ONLY those books you really want—as few as 4 a year.

SEND NO MONEY

Take your choice of ANY 3 of the new books described here—at only $1 for All 3. Two are your gift books for joining; the other is your first selection. Mail coupon RIGHT NOW to:

SCIENCE-FICTION BOOK CLUB
Dept. GX-3, Garden City, N. Y.

REPORT ON UNIDENTIFIED FLYING OBJECTS *by Edward J. Ruppelt.* At last! The first authoritative report on hitherto hushed-up facts about "flying saucers" . . . by a former Air Force expert in charge of their investigation. NOT fiction, but amazing fact! (Pub. ed. $4.95)

OMNIBUS OF SCIENCE-FICTION. 43 classic stories by top authors. Wonders of Earth and Man. Amazing Inventions. Space Travel and Visitors from Outer Space. Adventures in Dimension. Worlds of Tomorrow. (Pub. ed. $3.50)

BEST SCIENCE-FICTION STORIES AND NOVELS: 1956, *Ed. by T. E. Dikty.* 14 top-notch short stories and novelettes by such well-known writers as Robert Bloch, Frank Robinson, Mark Clifton, many others. (Pub. ed. $3.95)

DRAGON IN THE SEA *by Frank Herbert.* You're on a 21st-century undersea mission from which no human has ever returned. Now, 8000 feet down, *an unknown crewman wants you DEAD!* (Pub. ed. $2.95)

SATELLITE! *by Erik Bergaust & William Beller.* Top experts reveal full FACTS on the first man-made Satellite—information not even available in technical journals! (Pub. ed. $3.95)

THE END OF ETERNITY *by Isaac Asimov.* You *look* like other men, but you're an *Eternal*—sent from a timeless realm to change history. But you decided to travel through time and space to find *forbidden love.* (Pub. ed. $2.95)

WHICH 3 DO YOU WANT FOR ONLY $1.00?

SCIENCE-FICTION BOOK CLUB
Dept. GX-3, Garden City, N. Y.

Please rush me the 3 books checked below, as my gift books and first selection. Bill me only $1 for all three (plus few cents shipping charges), and enroll me as a member of the Science-Fiction Book Club. Every month send me the Club's free bulletin, "Things to Come," so that I may decide whether or not I wish to receive the coming selection described therein. For each book I accept, I will pay only $1 plus shipping. I do not have to take a book every month (only four during each year I am a member), and I may resign at any time after accepting four selections.

SPECIAL NO-RISK GUARANTEE: If not delighted, I may return all books in 7 days, pay nothing, and this membership will be cancelled.

- ☐ Astounding Science-Fiction Anthology
- ☐ Best from Fantasy & S-F
- ☐ Best S-F Stories and Novels
- ☐ Dragon in the Sea
- ☐ End of Eternity
- ☐ Omnibus of Science-Fiction
- ☐ Report on UFO's
- ☐ Satellite!
- ☐ Treasury of S-F Classics

Name _____ (Please Print)

Address _____

City _____ Zone _____ State _____

SAME OFFER TO RESIDENTS OF CANADA. Address Science-Fiction Book Club, 105 Bond St., Toronto 2. Offer good in U. S. A. & Canada only.

The Most Generous Offer Ever Made By

The SCIENCE-FICTION BOOK CLUB



TAKE

Any 3

OF THESE THRILLING

SCIENCE-FICTION

BEST-SELLERS

Yours for Only $1.00 WITH MEMBERSHIP



AN $8.85 TO $12.85 VALUE—
YOU PAY JUST $1 FOR ANY 3!

HERE'S AN offer just as amazing as the thrilling stories crammed between the covers of these books! These nine volumes contain not only "top-drawer" science-fiction, but science FACTS as well. Handsome, permanent bindings. Any 3 of them would normally cost you $8.85 to $12.85 in publishers' original editions — but you pay only $1.00 when you join the Club!

This generous offer is made to introduce you to the SCIENCE-FICTION BOOK CLUB, a wonderful new idea in bringing you the best of the new science-fiction books—*at a mere fraction of their usual cost!*



See Other Side for Full Details...